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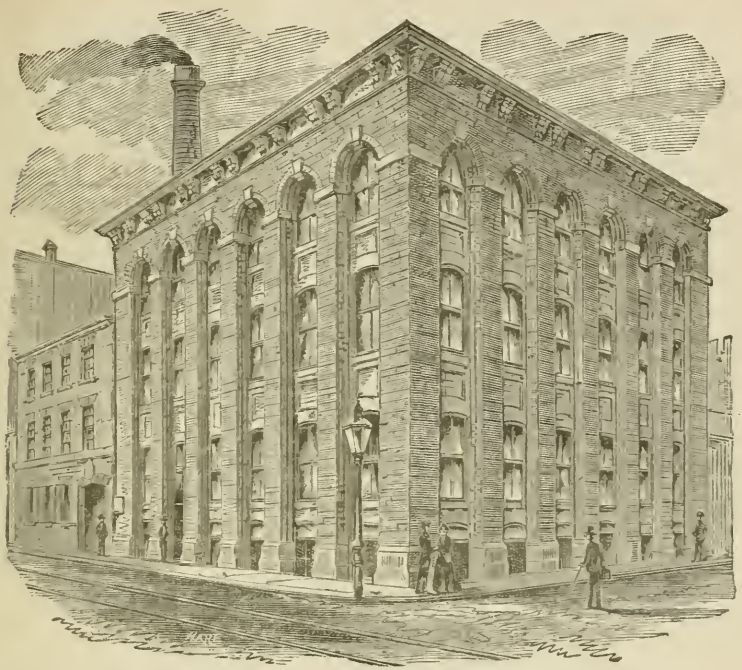

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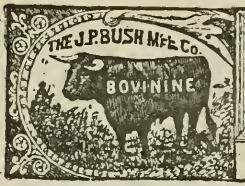

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CONTAINS THE ESSENTIAL ELEMENTS of the Animal Organisation—Potash and Lime;

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IT DIFFERS IN ITS EFFECTS FROM ALL ANALOGOUS PREPARATIONS; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

IT HAS GAINED A WIDE REPUTATION, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

ITS CURATIVE POWER is largely attributable to its Stimulant, Tonic, and Nutritive properties, by means of which the energy of the system is recruited.

ITS ACTION IS PROMPT; it stimulates the appetite and the digestion, it promotes assimilation, and it enters directly into the circulation with the food products.

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As these cheap and inefficient substitutes are frequently dispensed, instead of the genuine preparation, physicians are earnestly requested when prescribing the Syrup, to write "Syr. Hypophos. FELLOWS."

As a further precaution, it is advisable that the Syrup should be ordered in the original bottles (4/- or 7/-); the distinguishing marks which the bottles (and the wrappers surrounding them) bear, can then be examined, and the genuineness—or otherwise—of the contents thereby proved.

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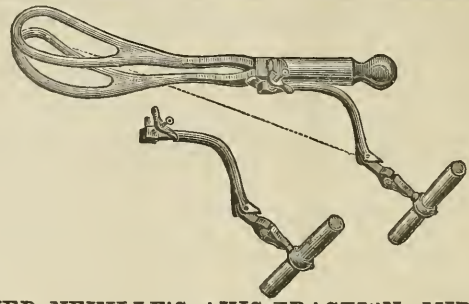

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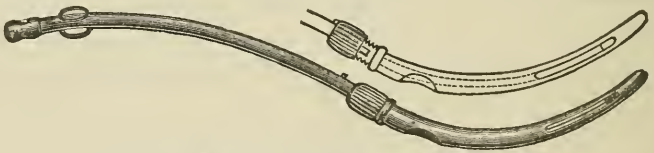

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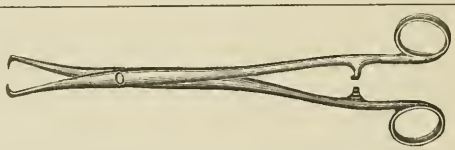

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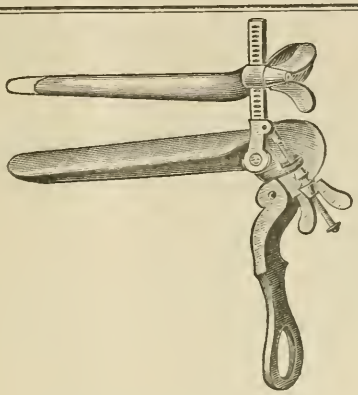

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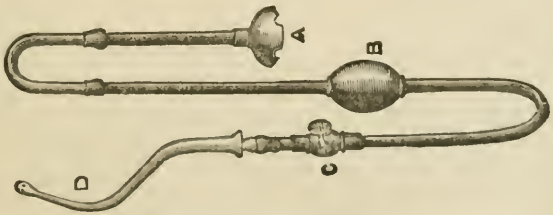

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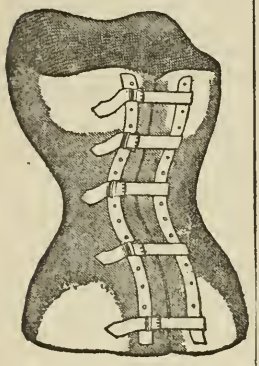


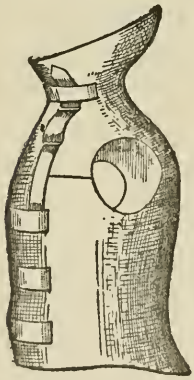
Instructions for Measurement, &c.

JACKET (*in cases of slight deformity*).

Circumference at axilla.
„ waist.
„ hips.
Length from axilla to great trochanter.

In severe angular cases circumference over apex of curve, position of same, and contour should be given ; in lateral cases a description of the case.

In all cases it should be stated if for male or female.



CERVICAL JACKET.

Same measurements required, and circumference at neck, and length from neck to axilla.

Any part of the Jacket can in the process of Manufacture be left Soft.

CLUB FOOT.

Circumference below knee.
„ ankle.
„ heel and instep.
Length from below knee to ground.
„ of foot.

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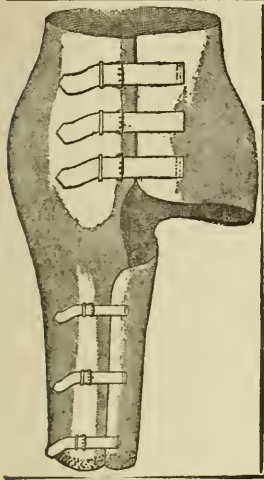

Instructions for Measurement, &c.

HIP SPLINT.

Circumference at waist.
„ hips.
„ thigh, top of
„ above knee.
Length from waist to groin.

State if for right or left side.

LEG SPLINT.

Circumference at top of thigh.
„ above knee.
„ at knee.
„ below knee.
„ calf.
„ ankle.
Length from groin to centre of knee.
„ centre of knee to ankle.

State if for right or left leg.

When the foot-part is required, also circumference of heel and instep, and length from centre of knee to ground.

If the limb is contracted the contour should be given.

Splints are also made in Poroplastic for fracture of Inferior Maxilla, Humerus Elbow-Joint, Forearm, Thigh, Knee-Joint, Leg, Shoulder-Joint, Hand, &c.

These Splints can be fitted perfectly to the Patient if softened either by hot water or in a Heater made for the purpose. When mounted with webbing, hot water will do; if with leather, a Heater should be used. The material becomes quite hard again in two or three minutes.

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Extract from "The British Medical Journal," Sept. 26, 1891.

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PEARL-COATED PILLS are very elegant in appearance and are readily taken by patients. The objection to their use is that sometimes the coating is so hard that the pills pass through the intestinal canal unchanged. Mr. Stephen Wand, of Leicester, has sent for examination specimens of some of his soluble pearl-coated pills. We find that when they are placed in water at a temperature of 100° F. and kept perfectly still, in the course of an hour the coating has become cracked and the water coloured, thus showing that the contents have become dissolved. If during the experiment the pills are shaken, the disintegration can be effected in a much shorter time. The addition of a little dilute hydrochloric acid greatly facilitates the operation. From these results it may be concluded that the pearl-coated pills sent by Mr. Stephen Wand would, under the conditions existing in the stomach, rapidly become broken up and their contents dissolved.

Extract from "CHEMIST & DRUGGIST," August 8th, 1891.

COATED PILLS.—We have received from Mr. Wand, of Leicester, samples of his soluble pearl-coated pills. They are very nicely made and finished, the coating being even, bright, and hard, yet we find that in cold water only the coating disintegrates in a very short time, and the mass underneath is also rapidly affected by the fluid. We take it from our experiments that the pills are perfectly soluble in the alimentary canal, and as far as we are able to judge the masses are made with excellent materials. The Blaud's pill, for instance, shows no signs of oxidation. Mr. Wand has nearly 1,300 formulæ, and offers ten-gross lots of the more popular pills at very low prices.

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Ext. Coloc. Co.	,, ij.	
,, Hyoscy.	,, i.	1s. 1d.
FEMALE.		
688 Ferri Sulp. Ex.	gr. 1 & 1-3rd.	
Aloes Soc.	,, 1-3rd.	
Canella	,, 2-3rds.	
Ol. Pulegii	♏ 1-3rd.	
Terebinth	q.s.	5d.

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"You will, I think, be glad to hear that the cases in which I have used the Inhalant have all benefited."

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PERIODICALS WITH WHICH THE DUBLIN JOURNAL OF MEDICAL SCIENCE IS EXCHANGED.

GREAT BRITAIN.

1. The Edinburgh Medical Journal. Oliver and Boyd.
2. The Retrospect of Medicine. Edited by James Braithwaite. Simpkin, Marshall, and Co.
3. Pharmaceutical Journal. Churchill.
4. The Lancet.
5. The British Medical Journal.
6. The Journal of Mental Science. London: Churchill.
7. The Glasgow Medical Journal. A. MacDougall.
8. The Medical Press and Circular.
9. The Westminster Review. Trübner.
10. Transactions of Obstetrical Society. London: Longmans.
11. The Practitioner; a Monthly Journal of Therapeutics. Macmillan and Co.
12. The Journal of Anatomy and Physiology. Macmillan.
13. Brain. London: Macmillan & Co.
14. The Bristol Medico-Chirurgical Journal.
15. The London Medical Recorder. London: W. H. Allen & Co.
16. The Provincial Medical Journal.

CANADA.

17. The Montreal Medical and Surgical Journal. Richard White. Box 386, P.O., Montreal.

AMERICA.

18. The American Journal of the Medical Sciences. Edited by Isaac Hayes, M.D. Philadelphia: Henry C. Lea. London: Trübner and Co.
19. The Medical Record. New York: William Wood & Co.
20. Medical News. Philadelphia: Henry C. Lea's Son and Co.
21. The American Journal of Science and Arts. Conducted by Professors B. Silliman, and J. D. Dana, &c. New Haven: Editors.
22. The American Journal of Insanity, Utica, N. Y. State Lunatic Asylum.
23. The American Journal of Obstetrics and Diseases of Women and Children. New York: William Wood and Company. London: S. Low, Son, and Marston.
24. The New York Medical Journal. New York and London: D. Appleton & Co.
25. The Medical and Surgical Reporter. Philadelphia: N. A. Randolph, M.D., and Charles W. Dulles, M.D.
26. Journal of Cutaneous and Venereal Diseases. New York: Wm. Wood and Co.

AMERICA.—*continued.*

27. The Times and Register. New York and Philadelphia.
28. Chicago Journal of Nervous and Mental Disease.
29. The St. Louis Medical and Surgical Journal. St. Louis: Geo. O. Rumbold and Co.
30. Journal of the American Medical Association. Chicago, Illinois.
31. Index Medicus. George S. Davis. Detroit, Michigan.
32. The Occidental Medical Times. James H. Parkinson, Editor, Sacramento, California.

FRANCE.

33. Répertoire de Pharmacie, Archives de Pharmacie, et Journal de Chimie Médicale réunis. Troisième Séric. Paris: M. C. Crinon.
34. Gazette Médicale de Paris. Paris: 4, Place Saint-Michel.
35. Journal de Pharmacie et de Chimie &c. Paris: Victor Masson.
36. L'Union Médicale. Paris: Bureau, Rue de la Grange-Batelière.
37. Archives Générales de Médecine. Paris: Asselin.
38. Bulletin de l'Académie de Médecine. Paris: G. Masson.
39. Revue de Thérapeutique Médico-Chirurgicale. Paris: Masson.
40. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Lunire. Paris: V. Masson.
41. Bulletin Général de Thérapeutique. Médicale et Chirurgicale. Par le Docteur Félix Bricheteau. Paris.
42. Répertoire de Pharmacie. Par M. Eug. Lebaigue. Paris: Rue de la Perle, 11.
43. Annales de Gynécologie. Paris: H. Lauwereyns.
44. Gazette des Hôpitaux. Paris: 4, Rue de l'Odèon.
45. Lyon Médical, Organe Officiel de la Société Impériale de Médecine. Lyon: Mégret.
46. Revue des Sciences Médicales en France et à l'étranger. Paris: G. Masson.
47. Gazette Hebdomadaire. Paris: 91, Rue de Lille.
48. Revue de Médecine et Revue de Chirurgie.
49. Revue de Laryngologie, d'Otologie, et de Rhinologie. Paris: Octave Doin.
50. Annales des Maladies des Organes Génito-Urinaires. Paris: 22, Place St. Georges.

BELGIUM.

51. Bulletin de l'Académie Royale de Médecine de Belgique. Bruxelles: F. Hayez.

52. Annales d'Oculistique. Bruxelles.

GERMANY.

53. Archiv für Gynækologie. Redigirt von Credé und Spiegelberg. Berlin: August Hirschwald.

54. Centralblatt für die medicinischen Wissenschaften. Berlin: August Hirschwald.

55. Jahrbuch für Kinderheilkunde und physische Erziehung. Leipzig: B. G. Teubner.

56. Archiv für pathologische Anatomi und Physiologie, &c. Herausgegeben von R. Virchow. Berlin: G. Reimer.

57. Berliner klinische Wochenschrift Berlin: Hirschwald.

58. Archiv für klinische Chirurgie. Herausgegeben von Dr. B. von Langenbeck. Berlin: Hirschwald.

59. Archiv für Psychiatrie und Nervenkrankheiten. Berlin: August Hirschwald.

60. Zeitschrift für physiologische Chemie. Herausgegeben von F. Hoppe-Seyler. Strassburg: Karl J. Trübner.

61. Deutsche Medizinal-Zeitung. Herausgegeben von Dr. Julius Grosser. Berlin: Eugen Grosser.

62. Albrecht von Graefe's Archiv für Ophthalmologie. Göttingen: Professor Dr. Th. Leber.

63. Centralblatt für klinische Medicin, und Centralblatt für Gynäkologie. Berlin: Hirschwald.

NORWAY.

64. Norsk Magazin for Lægevidenskaben. Udgivet af det medicinske Selskab i Christiania. Christiania: Paa Th. Steen, Forlag.

SWEDEN.

65. Hygiea, medicinsk och farmaceutisk Maonads-skrift. Stockholm: P. A. Norstedt och Söners förlag.

66. Nordiskt medicinskt Arkiv. Redigeradt af Dr. Axel Key, Prof. i Patolog. Anat. i Stockholm. Stockholm: Samson och Wallin.

67. Upsala Läkareförenings Förhandingar. Upsala: Ed. Berling.

DENMARK.

68. Hospitals-Tidende. Optegnelser af praktisk Lægekunst fra Ind- og Udlandet. Kjöbenhavn: Jacob Lund. London: Asher and Co.

69. Bibliothek for Læger. Kjöbenhavn: C. A. Reitzels Forlag.

70. Ugeskrift for Læger. Kjöbenhavn: C. A. Reitzels Forlag.

ITALY.

71. Lo Sperimentale, Giornale Critico di Medicina e Chirurgia per servire ai Bisogni dell' Arte Salutare. Direttore Prof. C. C. M. Butalini. 35, Via Alfani, Florence.

AUSTRALASIA.

72. The Australasian Medical Gazette. Sydney: L. Bruck.

BOOKS, PAMPHLETS, AND PERIODICALS RECEIVED—DEC., 1891.

1. My Personal Experiences in Equatorial Africa as Medical Officer of the Emin Pasha Relief Expedition. By Thomas Heazle Parke, Hon. D.C.L. (Durh.), Hon. F.R.C.S.I., &c. London: Sampson Low, Marston, & Co. 1891. 8vo. Pp. 526.

2. Ueber Myositis syphilitica diffusa s. interstitialis. Von Prof. Dr. G. Lewin. Berlin: August Hirschwald. 1891. Pp. 47.

3. Registered Combination Temperature and Diet Charts. Designed by Robert Simpson, L.R.C.P., L.R.C.S. Bristol: John Wright & Co.

4. Prescriber's Companion. By Thos. Savill, M.D. Lond. Second Edition. London: John Bale & Sons. 1891. Pp. 48.

5. Motherhood: a Book for every Woman. By Dr. Alice Ker. Manchester: John Heywood. 1891. Pp. 128.

6. Memorial to the Home Secretary about the Proposed Institute of Preventive Medicine.

7. The Pharmaceutical Journal of Australasia. Vol. IV. No. 9. September 25, 1891.

8. The National Bulletin. Nos. 52, 53, 54 and 55. November, 1891.

9. Statement of Mortality in the Principal Cities of Canada for the Month of September, 1891.

10. Transactions of the Edinburgh Obstetrical Society. Vol. XVI. Session 1890–91. Edinburgh: Oliver & Boyd. 1891. 8vo. Pp. 176.

11. Leprosy. By George Thin, M.D. London: Percival & Co. 1891. 8vo. Pp. 280.

12. The Memoirs (chiefly autobiographical), from 1798 to 1886, of Richard Robert Madden, M.D., F.R.C.S. Edited by his Son, Thomas More Madden, M.D. London: Ward & Downey. 1891. 8vo. Pp. 328.

13. Lucan Spa and Hydropathic as a Modern Health Resort. By Thomas More Madden, M.D. Dublin: M. H. Gill & Son. 1891. Pp. 38.

14. On Over pressure in Elementary Education. By Thomas More Madden, M.D. 1891.

15. Colour Test. By John Brown, M.D., D.S.Sci. Vict. Univ. London: Burroughs, Wellcome, & Co.

16. Report of the Hyderabad Chloroform Commission. With a Preface by Sir Asman Jah, K.C.I.E., Prime Minister of Hyderabad. Bombay. 1891. 4to. Pp. 399.

17. The Chicago Medical Recorder. New Series. Vol. II. Nos. 1 2, and 3. Chicago: W. T. Keener. 1891.

18. Wirkungen des Diuretin. Von Dr. Kress, Assistenzarzt. Nürnberg. Pp. 11. Separatabdruck.

19. Archives of Pediatrics. Vol. VIII. No. 95. November, 1891. Philadelphia: J. B. Lippincott Company.

20. Les Nouveaux Remèdes. Septième Année. Nos. 21 and 22.

21. Outlines of Practical Physiological Chemistry. By F. Charles Larkin, F.R.C.S. (Eng.), and Randle Leigh, M.B., B.Sc. (Lond.). London: H. K. Lewis. 1891. Second Edition. Pp. 86.

22. Diagrams of the Mouth, Fauces, and Larynx for Clinical Purposes. Published by J. T. Balcomb, London, W.C. 1891.

23. World Wide Missions. Vol. IV. No. 3. October, 1891.

24. Boletin medico de Puebla. Primer Año. Núm. 4. Octobre 20 de 1891.

25. The Medical Bulletin. Vol. XIII. No. 10. October, 1891. Philadelphia: F. A. Davis.

26. The A.B.C. Medical Diary and Visiting List. 1892. London: Charles Letts & Co., and Burroughs, Wellcome, & Co.

27. Letts' Medical Diary for the Year 1892. London.

28. Electricity in Carcinoma. By Robert Newman, M.D., New York. Reprint. Philadelphia. 1891. Pp. 29. [Duplicate copies.]

29. The Lord of Humanity. By Frederick James Gant, F.R.C.S. Second Edition. London: Longmans, Green & Co. 1891. 8vo. Pp. 163.

30. The Newsagent and Booksellers' Review. Vol. V. No. 20. November 14, 1891.

31. The Water Cure in the Bedroom; or, Hydropathy at Home. By G. H. Dondrey, M.B., M.R.C.S. Eng. Bristol: John Wright & Co. 1891. 8vo. Pp. 46.

32. The New York Journal of Gynæcology and Obstetrics. Vol. I. No. 1. New York. November, 1891.

33. The Journal of the British Dental Association. Vol. XII. No. 11. November 16th, 1891. Baillière, Tindall & Cox.

34. Blätter für klinische Hydrotherapie. I. Jahrgang. Nr. 7. Wien. November, 1891.

35. The New York Medical Journal. Saturday, October 31, 1891.

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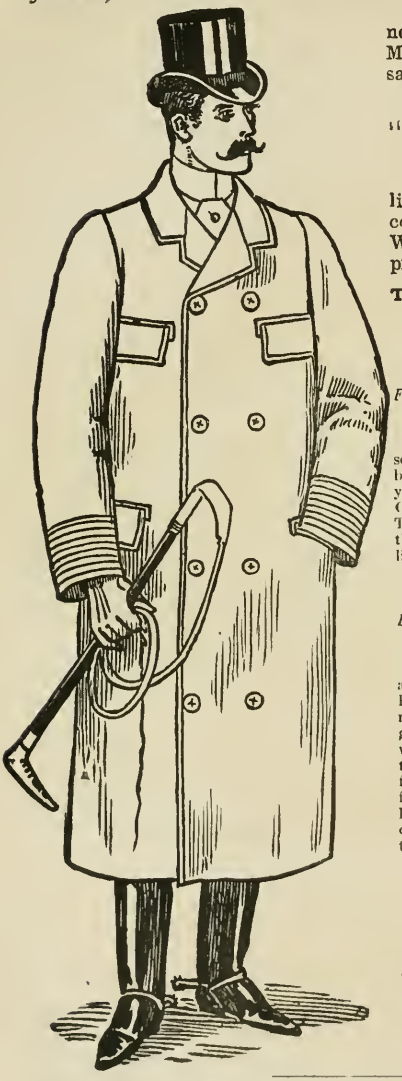

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From J. P. BALBIRNIE, Esq., L.R.C.P., L.R.C.S., L.M., Stanley Bank, Staveley, near Kendal.
"*Oct.* 18*th*, 1890.

"DEAR SIRS,—The 'Ulster' arrived safe and sound about the early part of the week, but I have been so busy it has not been possible for me to send you word before. I am more than pleased with the Coat. It is a splendid specimen of workmanship. The only sorrowful reflection I have when viewing this weather-defying garment is that it will last my lifetime, and that I may never require another.

"I am, Gentlemen, faithfully yours,
"JOHN P. BALBIRNIE."

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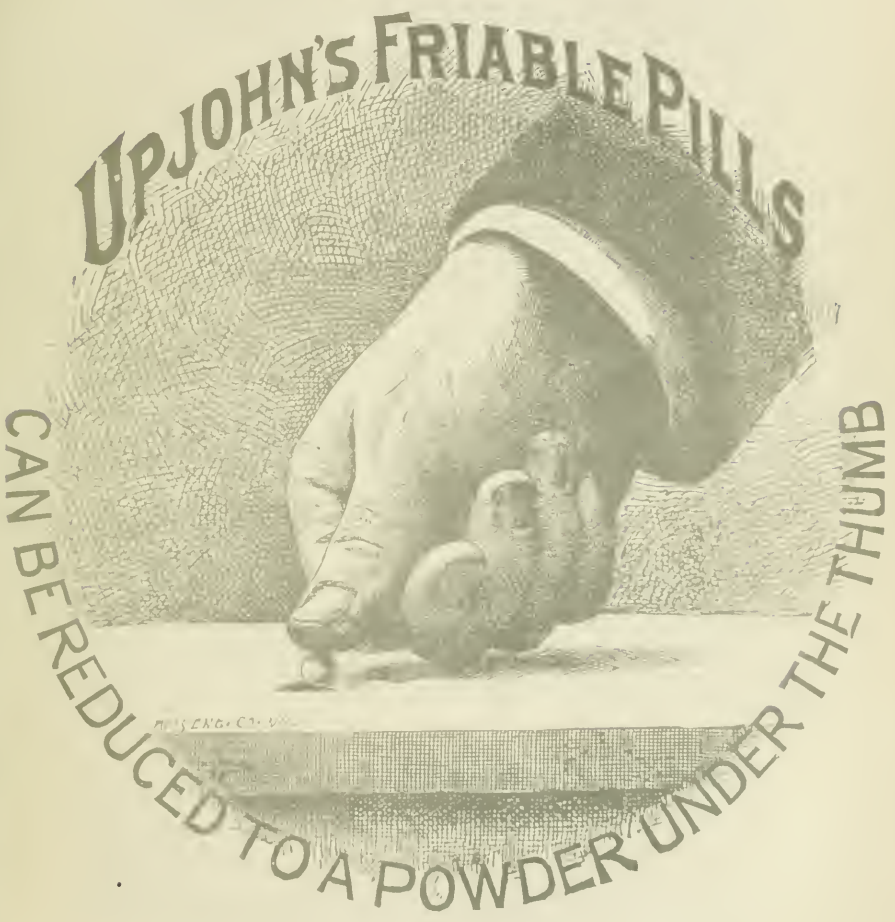

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THE

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EDITED BY
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PART I.

ORIGINAL COMMUNICATIONS.

ART. XX.—*Pathology, and its Teaching in Dublin.*[a] By C. J. NIXON, M.D.; Professor of Medicine, Catholic University; Senior Physician, Mater Misericordiæ Hospital; President of the Section of Pathology of the Royal Academy of Medicine in Ireland.

MY first duty is to thank you most heartily for the high honour which you have conferred upon me in electing me President of this, certainly not the least important, Section of the Academy of Medicine. It is a position dignified by historic associations, remote and proximate; and if I can but imitate, *longo intervallo*, the traditions which have been handed down by a succession of earnest and distinguished workers, I shall be content.

There is no pleasure unalloyed, no honour or distinction which has not its counterpart. When I learned that the holding of the office of President involved the giving (at four or five days' notice) of an Address, I confess that I would gladly have escaped so grave a responsibility, and I appealed to our worthy and distinguished Secretary that I might be spared inflicting upon you such crude and trite comments which, in a limited time, encroached upon by other and anxious concerns, were not likely to be worthy of the society or creditable to myself. But I was informed that the rule requiring the President to give an opening Address was as immu-

[a] Address delivered before the Section of Pathology of the Royal Academy of Medicine in Ireland, Friday, November 6, 1891.

table as the laws of the Medes and Persians, and the tone in which this enforced observance was conveyed was so emphatic, that I fully realised whatever hope there might have been of a new departure in the case of an ancient and historic people, there was none in the procedure of the Pathological Section of the Academy. There was, however, one privilege granted to me, that any communication I desired to make might be as short as would be becoming in addressing so learned an audience as that represented by the Academy of Medicine—a privilege which it is my intention to avail myself of.

In the short time that I shall intervene between you and the work of the meeting I propose using the opportunity which has been afforded me, unexpectedly and, I fully realise, undeservedly, to review briefly the position which the subject of Pathology now holds in scientific and practical medicine, and the means at our disposal, here in Dublin, of teaching the subject to students.

The progress of pathology during the present century may be classified under three almost equal periods. In the first, the great impetus which was given to the teaching of topographical anatomy led to a careful study of morbid macroscopic anatomy and to the relation of the changes observed to signs of disease existing during life—in other words, to clinical medicine.

In the second period the relation between pathology and clinical medicine was more fully established, whilst the careful investigations made as to the histology of the tissues and organs—a result largely aided by the improvements effected in the construction of microscopes—and the more defined knowledge which was acquired regarding the functions of these structures, helped to make the study of morbid anatomy the key to unlock the mystery of the processes of disease.

The third period dates from the discovery of Schleiden on the cellular structure of the vegetable tissues, followed soon afterwards by the recognition by Schwann of the cell as the vital unit of all organised structures, a doctrine elaborated and strengthened by the researches of Goodsir. Then came, in 1858, the epoch-making work of Virchow, the counterpart of the cell theory in normal pathology—dedicated to Goodsir "as one of the earliest and most acute observers of cell-life, both physiological and pathological"—giving to pathology that impetus by which it reached, almost in bounds, the high position which it holds in medicine at the present day, a position potential not alone in the light which it throws

upon the ætiology of diseased processes, but also in its forming the basis of a rational system of therapeutics.

It will not be forgotten that the present status of pathology is due, not so much to the study of morbid anatomy in its relation to clinical medicine, as to the advances which have been made in physiology and the opportunity which these advances afforded for their application to the study of pathological cell-life. So close is the connection between physiology and pathology that, in Professor Foster's words, the two may be regarded as identical. For what does physiology teach us?—not merely that the living body "represents a group of machines called organs, each doing a work called its function, the several machines being bound together in a more or less orderly manner into a bundle called the individual;" this forms but the outer crust of the science itself. The key that will unlock the mysteries of life is an understanding of the broader laws of that "conflict of atoms which is going on in every tissue; the perpetual building up and breaking down; that molecular strife which appears—now as the piling up of material in growth, now as the result of a secretion, or the shock of a muscular spasm, or the thrill of a nervous impulse." Take the instance Professor Foster gives of the secretion of the gastric juice. To secrete this is the function of the stomach, of the gastric glands. But, as we probe deeply, we find that we have touched but the fringe of the inquiry. We have to investigate into "the nature of those changes in the protoplasmic network of the cell, whereby, amidst the coming and going of granules, the shrinking and swelling of the cell, the crumpling and unfolding of the nucleus, water containing salts, and the mysterious pepsine, trickles into the lumen of the gland." It is here, obviously, that the study of physiology and pathology meet: the distinction which is drawn between them is merely an artificial one, useful in the limitation of different fields of labour, but one subject representing merely an extension of the same study and subject-matter, and both prosecuted by like methods of investigation. A morbid change of structure, however refined and elaborate may be the means of its investigation, is not in itself the disease; it is the result of the disease, the origin of which must be traced to those dynamic conditions which set up the structural alteration by disturbances as subtle as those which lead to the normal processes of secretion.

The connection or rather the identity which has been established between physiology and pathology affords grounds for satisfaction

at the progress which has been made in physiology during the past decade. Students are required to attend a course of practical histology as well as, in most instances, two courses of lectures on physiology; whilst, in some of the Universities, the course on practical histology is made to include instruction on experimental or practical physiology. This is as it should be. When we consider how limited is the opportunity for most medical men to obtain even a fair knowledge of physiology, and how intimately such knowledge is bound up with our conception of health and disease, I do not think in any way, I exaggerate the importance of this branch of medical education by placing it first in the list of all the subjects of the curriculum. Anatomy, it is true, *claims* the first place, not so much for its practical utility as that it is a discipline of the mind.[a] But, if we bear in mind that physiology comprehends the study of physics, chemistry, and biology, it is difficult not to concede to it at least as high a disciplinary effect as the study of topographical anatomy; whilst few will be found to contend that the practical utility of anatomy is comparable to that of physiology. It is due to this careful development of the study of physiology that pathology has been raised from being merely a branch of natural history, what it was in the time of Hippocrates, to the rank of an inductive science, strengthened as it has been by those researches in elemental pathology carried out in reference to plants by Sir James Paget, and to animals by Pasteur, Bland Sutton, and others.

In its relation to clinical medicine pathology may be said to have awakened the keenest sympathy of the physician. I have heard of one of our hospital teachers who sets his face against post-mortem examinations. He dislikes them, he said, because they always upset his diagnosis. Well I do not think there is a hospital teacher who has any interest in his profession who will be found to controvert this statement:—Take away the opportunity of accounting for the signs of disease existing during life, leaving to the physician merely the work of recording the life-history of his patients, let him be only a machine for the administration of drugs, and the interest of professional life may be said to vanish, medicine becomes a mere trade, and those who practise it but little removed from

[a] It is freely conceded that the great attention which has been paid to anatomy in the work of organisation, as well as teaching, has largely contributed to the success of our medical schools; whilst the high scientific character of the work done by our great teachers of the subject has materially helped to raise the status of the institutions with which they are connected.

charlatans. We are at once brought back to the time "when the anger of a god was a sufficient reason for the existence of a malady, and a dream ample warranty for therapeutical measures."

But let us realise fully what is meant by clinical medicine. It is the method of ascertaining by the life-history of the individual the dynamic condition which constitutes disease—that condition which may or may not be associated with change of structure, but which is the antecedent of the changes that represent the processes producing them. It is in the explanation of these processes that pathology steps in to clear up the difficulties which we meet with in our analysis of signs and symptoms.

Take, for example, a case of locomotor ataxy. We ascertain that a certain disorder of muscular movement exists, associated with disturbance of sensibility. This condition may be accompanied by trophic changes, affections of the nerves of special sense, disturbance in the various reflexes, occipital headache, cerebral vomiting, &c. The motor disturbance may be the same in all varieties of the disease, so that it would be difficult to conceive how any idea of localisation or of derangement of function could be formed without reference to pathology. It is pathology that teaches us that the lesion is one of the muscle sense-nerves, that these may be implicated either in the peripheral nerves, in their course through the posterior white columns of the cord, or at their termination in the cerebellum. Nay, more, it leads us to believe that incoordination of movement may be explained by a lesion of that small comma-shaped tract of short fibres in the dorsal region, which, in disease, undergoes a descending degeneration, and the function of which appears to be that of connecting the posterior grey matter of the cord at different levels. In locomotor ataxy pathology not alone explains the phenomenon of incoordination, but it helps us to understand these differences in the clinical symptoms which attend peripheral, spinal, and cerebellar lesions.

We have it claimed for clinical medicine that it is the mother and the mistress of the Medical Arts, but, stripped of its connection with pathology, clinical medicine would have to at once relinquish all pretensions to be regarded as a science. It would represent simply a huge muster of life-histories, a collection of guesses, skilful or otherwise, incapable of making progress, and subject to as many fallacies as a new religion preached by a crazy enthusiast. I am far from being disposed to under-estimate the great advance that has been made by accurate and careful clinical observation, but I merely contend

that without the light which is shed upon the processes of disease by physiology and pathology, the domain of medicine would be like a barren waste interspersed with isolated spots of luxuriant vegetation, but presenting on the whole the dreary aspect of a desert.

We may then estimate the relation of pathology to medicine under two heads, or as having two ultimate ends. One, as completely scientific in character as biology of which it is a branch; the second, where it becomes subservient to the practical ends of medicine, viz., the treatment of disease.

Regarding the first aim, Professor Huxley says:—"Living matter is characterised by its innate tendency to exhibit a definite series of the morphological and physiological phenomena which constitute organisation and life. Given a certain range of condition, and these phenomena remain the same, within narrow limits for each kind of thing. They furnish the normal and typical character of the species, and, as such, they are the subject-matter of ordinary biology. Outside the range of these conditions, the normal course of the cycle of vital phenomena is disturbed, abnormal structure makes its appearance, or the proper character and mutual adjustment of the functions cease to be preserved. The extent and the importance of these deviations from typical life may vary indefinitely. They may have no notable influence on the general well-being of the economy, or they may favour it. On the other hand, they may be of such a nature as to impede the activities of the organism, or even involve its destruction. In the first case, these perturbations are ranged under the wide and somewhat vague category of 'variations;' in the second they are called 'lesions,' states of 'poisoning' or 'diseases,' and, as morbid states, they lie within the province of pathology. No sharp line of demarcation can be drawn between the two classes of phenomena. No one can say, for example, where anatomical variations end and tumours begin, or where modification of function, which may at first promote health, passes into disease. All that can be said is, that whatever change of structure or function is hurtful belongs to pathology. Hence it is obvious that pathology is a branch of biology; it is the morphology, the physiology, the distribution, the ætiology of abnormal life. Henceforward the connection of pathology with the biological sciences is clearly defined, and pure pathology is that branch of biology which defines the particular disturbances of cell-life, or of the co-ordinating machinery, or of

both, on which the phenomena of disease depend." This clearly defines the strictly scientific position of pathology.

The second or practical aim of pathology by which it becomes subservient to the practical ends of medicine, is of paramount importance, inasmuch as it forms the basis for a rational system of therapeutics.

Surely this is a "consummation devoutly to be wished." Am I not justified in saying that the therapeutics of disease constitute the opprobrium of medicine? I am far from desiring to underestimate the value of experience in treatment, but how is the empirical method practised? By empirical laws in their logical interpretation, I understand uniformities which observation or experiment have shown to exist, but on which one hesitates to rely in cases varying much from those in which they have been actually observed, for want of seeing any reason *why* such a law should exist. But for the most part, the present view of the treatment of disease by the empirical method is not one based upon *uniformities*, but often on the experience derived from solitary instances of disease—in most cases the outcome of a confusion between cause and effect, and without the faintest trace of any intermediate link between the antecedent and the consequent. The fault seems to lie in medical men slavishly accepting the popular notion of disease—a point referred to by Professor Purser in his Address at the opening of the Physiological Institute of Trinity College, Dublin—which is to regard it as an entity apart from the individual, and for which there exists a specific. It may indeed be urged that in the majority of cases where drugs are administered, we are but carrying out the treatment of disease by "suggestion"—a method sufficiently appropriate for the *malades imaginaires*, though it is humiliating to be made the agents of those pertinacious individuals who call upon you to display their Pandora-like boxes of pills, pastilles, meat-extracts, and suppositories—triumphs, no doubt, of artistic pharmacy—to make us realise that one may "die of a rose in aromatic pain."

The evil of the present system of therapeutics is the tendency which it engenders to pass from the laboured and thorny paths of strict scientific accuracy to "the primrose path of dalliance," where, without any mental effort we can quote authority, like Scripture, for any end we may pretend to accomplish. Turning over one of our modern aids to therapeutics, I may adduce two diseases which are said to be cured by various drugs—chorea and Bright's disease. In the

former the following *résumé* of remedies for the disease is given :— Camphor, sulphate, valarianate and bromide of zinc, ammoniate of copper, extract of cimicifuga, various preparations of arsenic, iodide of potassium, strychnin, sulphuret of potassium, valerian, hyoscyamus, sulphate of aniline, various salts of iron, tartar emetic, opium, chloroform inhalations, gymnastics, and hydrotherapy. In this *embarras des richesses* the difficulty lies in selecting one out of so many *remedies*, in the treatment of a disease which a high authority—one with which my own experience fully accords—gets well under the influences of mental and physical rest, an appropriate dietary, and time.

In Bright's disease the *résumé* includes—amongst other drugs—Tartar emetic, water in large quantities, arsenic, belladonna, cantharides, digitalis, iodide and other properties of iron, potassii bitartras, potassii sulphas, potassium sulphite, scoparius, tannic and gallic acids, Dover's powder, the ubiquitous iodide of potassium, muriate of ammonia, guaiacum, and, though last not least, the perchloride of mercury. I presume each special drug has its followers, so that the broad line of empiricism, which the modern art of therapeutics so thoroughly embraces, split up as it is into so many sects of credulous votaries, cannot be said to present the front of a harmonious whole. Is it not this absence of any intelligible scientific basis for the treatment of disease, which brings such discredit upon medicine—affording a pretext for the cynical description of our art given some time since by one of her Majesty's judges—viz., that it consisted in putting drugs of which we know little into bodies of which we know less ?

Happily, the prospect in regard to the treatment of disease is not as discouraging as one might infer from its present position.

Pathology, especially experimental pathology, has influenced materially, and will influence still more in the future, our views regarding treatment. This is especially the case in reference to surgery, where the observations and experimental researches of Hughlings Jackson, Hitzig, Ferrier, Victor Horsley, and others, have led to the most important results in affections of the brain and spinal cord—methods of treatment promptly availed of, and with conspicuous success, by some of the members of our Academy of Medicine.

If Professor Koch did not realise the hope which he entertained as to the curative power which his re-agent exercised in tuber-

culosis, he, at all events, deserves the credit of demonstrating the power of selective affinity which this re-agent has for a special tissue, the nature of which it materially modifies. Few who have followed the progress of Koch's work, will refuse to admit that his experiments give grounds for the hope that pathological research will in the future afford the most intelligible basis for the administration of drugs.

Time does not permit of my dwelling upon the relation of pathology to Preventive Medicine, or upon that branch of it which is destined to play so important a part in the future of medicine—namely, Bacteriology. It is only necessary in this connection to mention the names of Davaine, Pollender, De Barry, Koch, Flügge, Klein and Gibbes, Friedländer, Pasteur, Watson Cheyne, Klebs, Crookshank, Cohen and Zopf, Burdon Saunderson, and Woodhead. To Lister, I need hardly remind the Section, we owe, from his physiological researches, the application of the germ theory in explanation of the phenomena of putrefaction. To what extent the theory of Biogenesis has spread may be realised by the facts which have accumulated with regard to the nature of the different infective fevers, diphtheria, anthrax, tetanus, erysipelas, actinomycosis, certain forms of gangrene, &c.

Having now pointed out the position which pathology holds in medicine, let me for a moment direct attention to its educational position. It is only within the past two or three years that the importance of the subject received such recognition as to require from students a certificate of a three months' course of attendance at instruction in it, and in the medical schools lecturers have been appointed to deal with the subject. But it is, I think, apparent that the means at the disposal of teachers is miserably inadequate, and we are driven to admit that, as regards the teaching of pathology, the Dublin School of Medicine is lagging in the race. We can account for this in many ways. The change effected by the establishment of the Academy of Medicine influenced, no doubt materially, the teaching of pathology. In the Pathological Society, notwithstanding its deficiencies, the student had at its weekly meetings a considerable field of observation in reference to macroscopic morbid anatomy, an opportunity not afforded by attendance at any single hospital, or by attendance at this Section. We, I take it, represent a society of research, and as such any attempt to turn our meetings into demonstrations of an elementary character would be, very properly, resented by the members. The

work done here is of a different order from that of the older Society, excellent in many respects as was its character. If I were to venture a criticism, I would say that the work of the new Society shows a greater amount of care in its preparation, a more rigid fidelity in the record of facts, a more reasonable and restrictive enunciation of speculative theories, a more marked toleration of differences of opinion, and a healthy repression of inferior or trite communications. There seems to have been engendered a certain coldness and austerity of tone in our proceedings which affords a contrast to the brisk and almost business-like air of those of the older Society.

But in the change that has been effected have our students sustained any loss? Is there truth in this statement, that pathology is taught more as morbid histology than in reference to macroscopic anatomy, that our students become experts more in cutting and staining than in familiarising themselves with the naked-eye appearances of disease, and further, that no opportunity whatever is afforded for the study of experimental pathology.

Added to this state of things we have the difficulty of paucity of material to contend with. The multiplication of hospitals in Dublin, and the comparatively few beds maintained in each, necessarily limit the opportunities of making *post-mortem* examinations, whilst the instinctive objection of our countrymen to permit of *post-mortem* examinations still further restricts investigation. We may sum up the position by saying that we are abundantly supplied with observations during life, restricted in a marked degree in reference to observations after death, whilst there is practically no opportunity afforded for experimental pathology. Is there any way out of these difficulties?

Gentlemen, I wish I possessed a position of weight and influence such as some of my predecessors exercised upon the profession. I wish most earnestly that I could express in forcible, if not eloquent, words, *ardentia verba*, the importance of the proposition which I put before you to-night. I am but one amongst many who recognise the deficiency, the utter inferiority, of the Dublin School of Medicine, in one respect, and I think I may say in one respect only, the want of a thorough method in the teaching of pathology, and it is more than expedient that something were done to place this matter upon a different and a satisfactory footing.

The proposal I venture to offer for your consideration is this—

that we should make the fullest use of all the means at our disposal for the teaching of pathology by establishing in Dublin a Pathological Institute. It would be impracticable, as it would be undesirable, to have such an Institute in connection with each of our three schools; but by establishing one independent Institute our resources would be concentrated, and our supply of material for investigation and demonstration rendered adequate. To put the idea into shape, I would suggest that such an Institute should have no connection with a medical school, and that it should have either an independent existence, in a suitable building provided for the purpose, or that a neutral, non-teaching body, like the College of Physicians, should undertake to give facilities as regards the providing of lecture rooms and laboratories, at all events in the start. If it could be accomplished, a special building for the Institute should be erected, and in the Institute the pathological teaching for all our students should be conducted. It would be premature to discuss details of management, &c.; but I may point out how the scheme could work. The Institute should be officered by a director and two assistants, who would be required to devote themselves exclusively to their special work. It should consist of three departments dealing with—(1) Pathology, (2) Bacteriology, and (3) Chemistry.

Pathology.—The assistant officers should be connected as pathologists with the various hospitals, and, in general, all *post-mortem* examinations in these institutions should be made by them. They should perform all autopsies in medico-legal cases, in workhouse infirmaries, public asylums, &c. A supply of material adequate for the purpose of teaching would in this way be provided. All systematic pathological teaching, macroscopic, microscopic, and experimental, should be carried on in the institute, and no certificates of instruction in pathology should be accepted by the licensing bodies except those issued from it.

Bacteriology.—There should be the fullest opportunity afforded for the study of bacteriology in its relation to processes of disease occurring in man, animals, and plants. In connection with this department *post-mortem* examinations would be made upon animals suspected to have died of poisoning or from infective disease, the examinations being made with collaboration of the Chemical Department.

Chemistry.—This department would deal chiefly with organic

chemistry, making analysis of the various secretions, examining for ptomaïns in various varieties of food, &c. It might also undertake part of the work done by the Public Analyst in the examinations of the various adulterations met with in food-stuffs and medicines.

In connection with the Institute there should be the fullest opportunity given for the treatment of diseases of which hydrophobia is the type, as well as for the thorough investigation of the mode of prevention and methods of cure of infective diseases in men and animals. It should provide the place where research might be carried on for these purposes.

The proposition which I venture to bring under your notice is, no doubt, revolutionary, and to some it may appear impracticable and Utopian.

Where, one asks at once, are the funds to carry out such a proposal as the establishment of a Pathological Institute in Dublin? I answer at once that the funds should come from the State; and I am sufficiently sanguine to hope that an appeal made by the Universities, by the Royal Colleges of Physicians and Surgeons, and by the Medical Schools, would so impress the Government with the utility of establishing such an Institute as I suggest that a sufficient grant would be forthcoming for the purpose.

It is not difficult to show how little the State has done for the promotion of science in Great Britain at large, but especially in this country, forgetting that its main duty is to promote health and prosperity, and to diminish to the fullest extent all the preventable ills "that flesh is heir to."

Some years ago, Sir Lyon Playfair, in an address to the British Association, directed attention to the neglect of science, in the matter of endowment, by the Government; and he mentioned some interesting facts which show the marked contrast between the fostering care exercised by other European States in reference to science and the Universities, and to science and industry, and the neglect of both at home—a neglect which explains our slow progress in both technical and scientific knowledge. A comparatively short time since the University of Strasburg was rebuilt at a cost to the State of £711,000, besides receiving an annual subscription of £43,000; the cost of 8 new laboratories being as follows:—Chemical Institute, £35,000; Physical Institute, £28,000; Botanical Institute, £13,000; Observatory, £25,000;

Anatomy, £42,000; Surgery, £26,000; Physiological Chemistry, £16,000; Physiological Institute, £13,900. France, though crippled after the disastrous campaign of 1870, rebuilt her provincial colleges at a cost of £3,280,000, whilst the annual budget for their support reached half a million of pounds. A small State like Holland spends £160,000 in the promotion of scientific and university education. Zurich, by her grade schools and her splendid technical college, has become a prosperous manufacturing city. A few years ago I had an opportunity of visiting the new University of Budapest, and inspected, with surprise and admiration, the departments devoted to medical education. Splendid lecture halls; physical, chemical, physiological, and pathological laboratories, all complete in every detail, and models of artistic structures and arrangement. The University was built by the State at a cost of £2,000,000 sterling. Foreign States fully recognise that the competition of the world is a competition of intellect; hence they consider money well spent and remunerative which promotes social progress and scientific culture.

> "Were half the powers that fill the world with terror,
> Were half the wealth bestowed on camps and courts,
> Given to redeem the human mind from error,
> There were no need of arsenals and forts."

Unfortunately the British Treasury is disposed to think there is a finality in science as well as in other branches of progressive knowledge. But even independently of State aid, a moderately large income would be derived from students' fees as well as from the specialist work done in the different departments, as in the examination of tumours, sputum, urine, food, and medicine; making autopsies on animals, and conducting medico-legal investigations. We might, too, reasonably expect that our two universities would extend aid, direct or indirect, to a concerted effort made to give us the means of putting the all-important subject of pathology on a level with the position it holds in the great Continental schools of medicine.

I am one of those who hold that it is sound and pure patriotism to endeavour to promote the progress of that concern which forms the business of one's life, whether it be arts, science, or industry. Our concern is with medicine. We have here in Dublin many of the elements which should combine to render our School of Medicine as attractive at least as those great schools in Scotland

which serve to indicate the progress of the sister country. Why should we not make a great effort to put our School on a level with those of France and Germany? Why should we tacitly admit that our position in the future must be necessarily one of inferiority? Will we make no effort to keep our students at home and attract strangers to our hospitals and schools? Shall our motto be—"Carpe diem, quam minime credula postero"? We have advantages, surely, which should be fully availed of—two Universities in our midst; but three medical schools, sufficient to promote a healthy rivalry; unrivalled opportunities for clinical teaching; but one glaring deficiency—that to which I have called attention. Will not a combined effort be made to remove any shackles that would be likely to bar our progress?

I am not vain enough to believe that the scheme which I have ventured to outline in reference to the future of pathological teaching in Dublin will be carried out as I have indicated; but if I succeed in arresting the attention of those who are alive to the interest of medical education at home, and that something, no matter in what direction, is done towards placing pathology on the footing which it should hold as a branch of scientific teaching, I will, indeed, have reason to be proud of the honourable position which you have conferred upon me in electing me President of the Pathological Section of the Royal Academy of Medicine.

ART. XXI.—*Hot Water Flushing applied to General Surgery.*[a] By ROBERT O'CALLAGHAN, F.R.C.S.I.; Surgeon, Carlow Co. Infirmary.

IT is now five years since I stated in a paper on "Abdominal Section," read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, that in my experience true antiseptic surgery meant absolute cleanliness, and tried to show then that the result of my abdominal work up to that time demonstrated that this was easily obtained by flushing with large quantities of hot water from the tap at a given temperature. This important addition to surgery is one of the many that the surgeon has learnt from the modern gynæcological school, the pioneer of which taught me its value. I found I could get better results by this

[a] Read in the Surgical Section of the British Medical Association at Bournemouth, July 29, 1891.

simple treatment than by the elaborate preparations and detail which I formerly practised with assiduity, and had been taught was positively essential for asepsis; which, although carried out under the most careful supervision, was far from satisfactory—suppuration and even septicæmia occurring in the work of many of our brilliant surgeons. The defects of this Listerian method were never so apparent as when watching the work of a well-known operator, who religiously adhered to and was surrounded by all the paraphernalia of Listerism. The spray was wetting him and his assistants thoroughly, chilling the patient; his carbolised instruments were handled by anyone, laid down anywhere but in the appointed tray; sponges accidentally dropped on the floor were picked up covered with a million streptococci and washed with the others. This is not imagination; but even in this year of our Lord, despite the most carefully laid down rules, it happens every day in many an operating theatre.

No one knows how hard it is, except those who have tried, to get medical men and nurses—mark, I speak of the better class and well trained—to grasp the meaning and importance of surgical cleanliness. Some, when they have washed their hands as if going to dinner, rinsed them in carbolic or sublimate, mopped the wound and its area with a sterilised lotion, and have all the other details of this elaborate method, think that all is perfectly safe inside this elaborate cordon. Should there be failure in asepsis after all this observance of detail, the lotion, ligature, or dressing is blamed, but the real secret of failure is overlooked. Too much faith has been placed in this chain of antiseptic agents; a link has been dropped by some carelessness of detail on the part of the operator, assistant, or nurses—this link being absolute cleanliness, which in itself is the basis of the whole fabric called Listerism, which, when carried out in a thoroughly trained clinic, is very pretty and imposing and generally successful, but which I maintain is quite unnecessary if cleanliness alone is observed.

Having experienced all this, and been through the maze of antiseptic surgery, carrying out every detail as precisely as was possible (in accordance with the rules laid down with so much fulness and clearness in that excellent work of Mr. Watson Cheyne on "Antiseptic Treatment of Wounds"), with so many disappointing results, I abandoned it five years ago in favour of absolute cleanliness, which I found was the basis of antiseptic work, and

was brought about by hot water flushings before, during, and after operation. The details of this treatment are easily followed. I have supplied myself with two glass jars capable of holding four gallons, and to each of which is attached ten feet of rubber tubing with nozzle and stopcock. These are on automatic telescopic stands, and filled with hot water at a temperature of 118°, or as hot as the hand can bear; colder than this is useless. Begin by douching your wound area, or wound if there is already one, using a sponge or brush in conjunction with this. During operation your assistant removes blood, pus, or any *débris* with this jet of water. After tying vessels, douche until all capillary oozing ceases; and having stitched up your wound, now use the water as hot as it can possibly be borne over the wound surface and its area *ad lib.;* dry and apply dry wool dressing. All this time your hands, instruments, and sponges have been under a stream of hot water, and defied the attack of the various organisms liable through contamination of tainted atmosphere, untrained assistants, incompetent nurses, or ignorant probationers, which I have already stated had a great deal to do with the repeated failures of asepsis in the so-called Listerian method, which, with its elaborate preparation and detail, to say nothing of getting up steam with a possible bursting of your boiler, took up a lot of unnecessary time, if not a whole morning.

In the after-treatment and re-dressing hot water is again resorted to. Your rubber sheet and bath being in position, the douche is turned on until the dressing of a week or more (which is as stiff as a splint from the primary oozing) practically falls off the wound itself; douche the wound thoroughly, which if not healed throughout is quite aseptic; dry and dress again.

To illustrate to you that I have given this method a fair trial, I shall now give you a short summary of a few capital operations performed by me in the Carlow Infirmary during the past five years, referring briefly to special cases and the advantages of this treatment. The good results thus proved will, I hope, convince you completely of the claims of this simple antiseptic agent, which is as powerful as any we possess, and can be obtained in the remotest district at very short notice. In amputations I have noticed that it causes quicker adhesions of the flaps, which under the old method and steam were cold and flabby, but which the hot water makes warmer than the body, causing capillary activity,

which is continued by the warm wool dressing, and results in healing by first intention. This has been the case in three amputations of the thigh; ten below the knee, two of which were primary in one patient after a railway accident, and who was suffering from advanced mitral disease, which in no way interfered with the good result; six amputations above the elbow; one at the elbow for senile gangrene in a patient aged seventy-two.

In empyema, having made a large incision, I flush out the pleural cavity until the water returns clear, and drain. I have had three cases, all of which resulted in complete cure. In the last case I removed the drainage tube at the end of the third week. In excision of the os calcis and astragalus, treated in the same manner, the wound was quite healed and the patient able to walk about with a pad under the heel at the end of three months. Strangulated hernia with radical cure, fourteen; two of these occurred in men over eighty, all successful. Umbilical hernia, two; excision of hip, one; psoas abscess, curetted, two; &c.

These capital operations, taken at random from my general surgical work, are all examples of the results obtained from this mode of procedure. I do not include abdominal or gynæcological operations, to my experience in which branch of surgery I owe the adoption of hot water flushing in general surgery; and since I have used it exclusively I have had nothing but good results, knowing nothing of septicæmia, erysipelas, or any of their cousins. Hence my anxiety to bring it to your notice, claiming no priority. Though never having seen it described in text-books, nor yet observed it carried out in practice, I feel sure that some surgeons have been working in the same field. However, from time to time I have seen warm water "PLAYED" with, and squeezed over wounds with sponges; but this I want to impress on you is not what I mean by hot water flushing.

The success which I claim entirely depends upon the thorough comprehension of the facts—(1) that the temperature of the water is not under 115°; (2) that you have gallons of it for use, which will insure a constant and unremitting supply from the beginning of the operation to the end, and by this obtaining the desired object—a perfectly aseptic wound.

ART. XXII.—*Notes on the Treatment of Scarlet Fever.* By HENRY NOBLE JOYNT, M.A., M.D.; Diploma State Medicine, Dubl. Univ.; Medical Superintendent, Bradford Fever Hospital; late Assistant Resident Medical Officer, Fever Hospitals, Birmingham and Dublin.

I FEEL almost bound to apologise for taking up the pages of this Journal with what at first sight seems such a trivial subject as the treatment of scarlet fever. Hilton Fagge, in his masterly treatise on medicine, considered ten lines a sufficient space to devote to it. His editor, in the second edition, increased this to three-quarters of a page. And yet scarlet fever is one of the most common of all diseases; it carries off annually from 2 to 6 persons per 10,000 of the population, is followed by a greater number of grave complications than perhaps any other human ailment, and requires careful nursing and special treatment not less urgently than, say, enteric fever. The following statistics, the only ones at hand, will show how careful treatment influences the death-rate of scarlet fever. During 1890, in Birmingham, 2,524 cases were treated in the Fever Hospital; the death-rate was 6·4 per cent. Four hundred and seventy-one cases were treated at their own homes; the fatality was 9·7 per cent. During the same year the death-rate in the Bradford Fever Hospital was 6·6 per cent.; the fatality of those treated at home reached 13·3 per cent.—that is, exactly double.

It is only of late years that the study of infectious diseases has taken the place it deserves in the medical world. Before the discovery of micro-organisms and their relation to disease our knowledge of fever was of the crudest nature, and, consequently, no rational treatment was or could be adopted. Since the discovery that infectious diseases are caused by specific micro-organisms our methods of treatment are slowly being revolutionised. As yet we are merely on the outskirts of a vast field of new knowledge as to the ætiology of these diseases, and our therapeutics are still more or less empirical; but, with an increasing insight into the nature of morbid phenomena, and an increasing knowledge of the chemical and physiological properties of therapeutical agents, we shall ere long have a greater command over the ills that flesh is heir to. And of no class of disease may this be said so certainly as of that great group caused by the development in the body of the specific pathogenic fungi.

To carry out the scientific treatment of any fever an intelligent grasp of its causation, nature, and effects is essential. Specific fevers are caused by the entrance into the system of definite micro-organisms, which multiply therein and produce changes, chemical or otherwise, inimical to its well-being. Although but a few pathogenic organisms have been demonstrated, analogy goes to show that every fever is due to a separate and specific bacterium, be it a micrococcus, bacterium, bacillus, or spirillum. The bacteria, having gained an entrance into the body, after a varying period corresponding to the stage of incubation, multiply to an enormous extent, so that in some diseases—as, for example, anthrax—each drop of blood may contain numerous bacilli. In other fevers, on the contrary, bacteria are never found in the blood. The struggle, however, between the invading germs and the invaded organism is not always one-sided. As the bacteria multiply they have two potent agencies to contend against. Perhaps at first the more powerful are the phagocytes, so ably described by Metschnikoff, but the "defensive proteids," the "sozins" of Hankin, poisonous to the bacteria, play a no less important part. Should these defensive agencies be weak—should the leucocytes be few or the sozins deficient or wanting—the microbes have it all their own way, and either elaborate a substance poisonous to the system, which has been variously termed a ferment, a ptomaïn, a toxin, an albumose, and an alkaloid, or else their presence sets up toxic chemical changes in the blood and tissues. The phenomena of malignant scarlatina—the rapid poisoning of the nerve-centres, &c.—are a good example of such effects. In the consideration of the treatment of scarlet fever these two factors must, therefore, be kept in view—(1) the virulence of the scarlatinal virus; and (2) the resisting power of the patient; and our efforts must be directed to destroy or mitigate the one, and to aid or increase the other.

It is lamentable to confess that in spite of all our increased knowledge of therapeutics, and our insight into the secrets of physiology, we are almost powerless in the presence of severe cases of zymotic diseases. There are certain influences beyond our control which increase the gravity of the disease, and these require consideration; they are partly external, partly constitutional. One of the most important factors is epidemic influence. As Graves has pointed out, scarlet fever varies much at different times. In some years and in some places scarlatina rages with exceptional

virulence; in other years in the same locality it may appear as a comparatively trifling complaint. Sporadic cases are generally mild, but as an epidemic gains force the type of disease becomes more severe. Season, too, has a modifying influence. During the autumn months scarlet fever usually reaches its maximum severity, although in my experience a larger proportion of grave and fatal cases occur in spring. Family predisposition furnishes an important factor. In some families it assumes a malignant type, and nearly all succumb, no matter how vigorous. Then individual constitution must be remembered. Strumous, ricketty, and weakly children suffer much more severely than the healthy, and concurrent or precedent diseases increase the gravity of scarlet fever. Lastly, of equal importance is the age factor. The greatest fatality occurs from two to four years of age, and two-thirds of all deaths occur under the age of five.

Theoretically the treatment would appear to be the injection, at as early a stage in the fever as possible, of a "protective proteid," the active principle derived from the blood-serum of an immune animal, "which has the power of destroying either the microbe against which immunity is possessed or the products on which the pathogenic action depends."[a] Proceeding on such lines, Prof. Behring and Kitasato have cured both diphtheria and tetanus in mice and guinea-pigs, and Hankin has isolated the proteid which protects the rat from anthrax. But as the scarlatinal "sozin" has not yet been discovered, we must proceed on more empirical lines. Some years ago the "expectant," that policy of masterly inactivity, was the favourite treatment of all fevers, and is at the present day upheld by many physicians. Now, however, a policy of active, aggressive treatment is gaining ground. If we cannot render the organism immune to the action of bacteria, we at least can and ought to try to destroy them by bringing about what Professor Behring aptly terms the disinfection of the living body—either by killing the microbes directly or else by hindering their growth. No chemical has yet been discovered which can be given in doses sufficiently powerful to kill the bacteria without at the same time producing toxic effects fatal to life. We must, therefore, fall back on the alternative method of charging the system with a weaker and less injurious antiseptic, and so hinder bacterial development and reduce the quantity of toxic substances elaborated.

To carry out in practice the above theoretical conclusions, anti-

[a] Hankin. On Immunity. Lancet. August 16, 1891.

septic treatment must be both local and general, must aim at destroying the micro-organisms at the seat of invasion as well as in the system. The scarlatinal germs enter the body chiefly through the mouth and nose. In any case, the scarlatinal virus, like the diphtheritic, exhibits a remarkable local action on the fauces and tonsils, and our efforts must consequently be directed largely towards the region of the throat. In fact, some writers believe that by a vigorous local treatment by certain antiseptics scarlet fever may be aborted. Be this as it may, frequent irrigation with antiseptic solutions is essential. The number of such available antiseptics is large, and each writer recommends his own favourite as a specific and the only specific. The mercuric salts, iodine, chlorine, eucalyptus, thymol, carbolic acid, boric acid, iron, chlorate of potassium, the alkalies, &c., have all been lauded, and are all useful. Personally, I find a strong solution of boric acid in glycerin, prepared and used as recommended by Dr. Manning,[a] very reliable. It has the advantage of being not only innocuous if swallowed, but beneficial. The throat and nares should be thoroughly syringed out every three or four hours with this solution, and oftener if necessary. After irrigation I find painting the ulcerated structures with the thick boroglycerin, or with glycerin of iodine (1 in 7), or, better, with glycerin of thymol (1 in 10–50), a valuable addition.

The internal antiseptic treatment is not very satisfactory. In hospitals, at least, cases do not, as a rule, come under treatment sufficiently early to give it a fair trial. Of the many preparations at hand I have found thymol in full doses, dissolved in alcohol or olive oil, given with nux vomica and ammonia, the most useful. Quinine did not seem to give as good results as in enteric and other fevers. Of iodine I have little experience. Eucalyptus oil and the biniodide of mercury have been extravagantly praised, but hospital tests have not borne out the wonderful results claimed by their advocates. Indeed, the latter is often hurtful.

Besides the antiseptic, many other methods of treatment, theoretically and clinically, are valuable. These may be classified as follows:—(1) The eliminative, which aims at getting rid of the excessive waste products of metabolism caused by the fever by means of diaphoretics, diuretics, and purges. (2) The antipyretic, which, by reducing temperature, reduces waste, quiets the nervous system, and conserves the patient's strength. Hot baths gradually cooled are undoubtedly the best means of reducing temperature in

[a] British Medical Journal. May 2, 1891.

children. Cold packs for adults, cold sponging, ice-caps, &c., are all useful. It is wonderful how, in many cases, delirium ceases, restlessness disappears, and sleep follows the application of water in some one of the above forms. The continuous-immersion-in-bath treatment, so successfully used in enterica by Dr. Barr, ought to be equally beneficial in scarlet fever, and deserves a trial. Antipyrin is well borne by children, and quickly and safely reduces temperature; quinine is less certain. (3) The stimulant treatment strengthens the heart, counteracts the nervous depression, supports the strength, and enables the patient to tide over the acute stage. Carbonate of ammonia, digitalis, caffein, and strychnin, separately or in combination, are invaluable drugs. Strychnin seems especially useful in scarlet and other fevers. Of the value of alcohol it is difficult to speak. No drug has been so often prescribed, or so closely observed, and yet over no drug has there been so much discrepancy of statement as to its physiological and therapeutic properties and clinical value. Personally, I use alcohol sparingly; children, and indeed the majority of cases, do very well without it. But should the heart become feeble, and nervous prostration marked, the tongue dry and cracked, and the rash purplish, then it becomes a valuable remedy. It must in such cases be given in full doses and pushed. By a free use many lives have apparently been rescued from death, but very many more have been lost by its injudicious employment. Therefore, as Dr. Squire observes in Quain's "Dictionary of Medicine," "alcoholic stimulants are only to be used with great caution." (4) Acids relieve thirst, stimulate the secretions of the digestive tract, and prove refreshing, but have little other value. (5) The perchloride of iron is a universal and favourite remedy. Of its efficacy in diphtheria there is no doubt, and when diphtheria complicates scarlet fever it is useful, but in most cases it has little or no effect, and I have almost given up using it. In the large, hard, swollen tonsils in patients subject to tonsillitis it is chiefly indicated. Unfortunately, in spite of the most skilful treatment, a large percentage of our cases die, and in malignant scarlet fever all remedies seem equally futile.

On the general management and dietary of scarlet fever a few notes are necessary. Confinement to bed, free ventilation of the sickroom, a constant temperature of about 60° to 65° F., milk diet, and flannel worn next the skin, are the broad principles of management during the acute stage. Free ventilation is an important point: a scarlet fever patient cannot have too much fresh air, the

maintenance of a warm temperature is a secondary matter compared to it. A hot bath daily, and sponging the body over with acidulated water or a weak solution of glycerin is refreshing, and enables the skin to act. Milk diluted with barley, soda, or lime-water, or boiled, or made into whey, should form the staple diet. Pancreatised and peptonised milk is more readily digested than plain milk. Cream is valuable for children. Beef-tea often sickens and causes diarrhœa in children; as ordinarily made it is stimulating rather than nutritious, but when prepared by digesting for a few hours, in a warm place, finely minced raw meat in water acidulated with hydrochloric acid, a highly nutritious fluid is obtained. Eggs are excellent. Sipping hot water or coffee assuages thirst, and the patient should be allowed to drink as much water as he cares, provided the quantity is not excessive.

As desquamation is most active during the second and third weeks, it is well to keep the patient in bed during this period. By this means the epidermic scales are prevented from being scattered about. A course of hot baths and inunction of the skin with some oily substance hastens the detachment of the epidermis. Many recommended the use of antiseptic inunctions to destroy infection, and in private practice this may well be carried out. Dr. Allan Jamieson[a] has advocated the use of resorcin-salicylic soap to hasten desquamation, but equally good results may be obtained by the use of any other soap and frequent bathing. Carbolic and other strong soft soaps are injurious to most skins. The patient should not be allowed to mix with his fellows till all signs of desquamation have disappeared from the soles of the feet.

It is well to keep the patient on low diet until the temperature falls to normal. Then bread, butter, rice, puddings, and other light farinaceous food may be substituted. In hospitals it is customary to withhold meat for the first three weeks.

A brief notice of the treatment of the chief symptoms and complications may not be amiss. As no one method of treatment is the best, and lest I should seem dogmatic, I may here say the lines recommended are those from which I have observed the best results in cases sufficiently numerous to exclude fallacies, and I have at some time or other seen most remedies tried on upwards of 5,000 cases of scarlet fever. Delirium, restlessness, and sleeplessness usually co-exist with a high temperature, and until the temperature is reduced hypnotics are of little use. Reduce the temperature, and

[a] Lancet. September 12, 1891.

sleep and rest often follow. Baths and cold packs are useful. If the delirium be violent, in young sthenic adults Graves' mixture of tartar emetic and opium may be tried. Paraldehyde is, I believe, the most certain hypnotic, given in full doses. It acts rapidly, often within five minutes, is not depressing, but its nauseous taste is an objection. Bromidia, the bromides and chloral, sulphonal, chloralamide and urethan are useful in descending order. Morphin had better be postponed till other hypnotics are tried and found wanting. Laryngitis is often a serious complication. Hot fomentations, bromide of ammonium or potassium given every hour, combined with the use of the steam kettle medicated by creasote, tinctura benzoini co., conium, &c., may relieve it; but should the symptoms of laryngeal obstruction become marked there should be no hesitation in performing tracheotomy. To be successful, tracheotomy must be done early, and then the results are not unfavourable. Salicylate of sodium in scarlatinal rheumatism is a specific. In very few cases indeed does it fail rapidly to relieve pain. It is best given in moderate doses every hour or two hours till effective, and then in smaller doses at longer intervals for some days. If there is much arthritic swelling, wrapping the joints in cotton-wool is pleasant to the patient. The salicylate should always be pushed if there is any sign of pericarditis, even of nephritic origin. Under this treatment I never remember having seen effusion sufficiently abundant to be detected. Two very common and troublesome complications are otorrhœa and secondary rhinorrhœa, the latter coming on after the second or third week. For otorrhœa the usual method of syringing out the ear, carefully drying it, and insufflating fine boric acid powder, as a rule, suffices; but in strumous children sometimes a thin, fœtid, and acrid discharge continues for days and weeks. An instillation of alcohol (at first 1 in 4, then stronger) in water holding in solution boric acid, thymol, or other antiseptic deodorant, poured into the meatus, the child lying ear upwards, and retained for about twenty minutes, three or four times daily, often succeeds where the dry method fails. Alcohol should not be used if there be any acute inflammation. If any redness and tenderness appear over the mastoid process behind the ear, or should the ear stand out at right angles, an early and free incision should be made down to the bone. Free depletion is essential, and poultices increase the hæmorrhage. The secondary rhinitis of strumous children is difficult to cure. Syringe the nares frequently with an antiseptic, alkaline or weakly astringent, lotion, and then pass a quill of lint

or absorbent wool smeared with an antiseptic ointment, preferably one of the mercurial preparations, into the meatus. At the same time, in both otorrhœa and rhinitis, the strumous habit must be treated by cod-liver oil, the phosphates, and iodides.

The last and most important complication which needs notice is nephritis. It is well to test the urine daily for albumen, especially about and after the 17th day, as nephritis may come on without warning. When kidney disease manifests itself, the patient should be purged, wrapped in flannel, placed between blankets in bed, and put on a strictly milk diet. Mild cases require no other treatment. The favourite purgative is pulv. jalapæ co., but often it causes vomiting, and jalapin given in sugar is less bulky and nauseous, and therefore preferable. Should the urine be scanty, in addition to purgation, hot fomentations or frequent hot poultices to the loins, hot baths and blankets may be employed. Diuretics are of doubtful value, although some of the best authorities highly recommend them. The milder potassium salts, especially the citrate, are the most useful. If there is much anæmia the iron salts are better. In the majority of cases the urine becomes plentiful in a few days with or without diuretics. Blood is present in a small proportion of cases at the onset or within a few days. Some, happily few, withstand treatment, and drift into chronic Bright's disease—the smooth, white kidney. If the hæmorrhage is excessive or long-continued, hazelin, ergot, and perchloride of iron seem to be the most useful drugs; gallic acid and other astringents have little effect. But rest in bed, and milk diet, copious draughts of water, hot baths and hot local applications, and strict attention to the bowels, are the main points in the treatment of scarlatinal nephritis. Dropsy needs little comment. If treated early, on the lines laid down, the dropsy of scarlet fever gives little trouble. If neglected, however, it is a very serious complication. Digitalis and iron seem the most useful diuretics.

Characterised by headache, uncontrollable vomiting, convulsions, and coma, uræmia is a formidable result of nephritis, and requires active treatment. For convulsions I have found the following successful:—At the onset of the convulsion a brisk purge is administered; calomel, grs. 2–5, or croton oil, ♏ ss.–i. rubbed up in butter, is placed on the back of the tongue. At the same time an enema of chloral and bromide of ammonium is given. Should the convulsions last for more than five or ten minutes, chloroform is pushed. In nearly every case the patient sleeps soundly after, and there is no return of the fits. A gag prevents the tongue being

bitten. A mixture of chloral and the bromides is given for the next few days. The most troublesome, and the least amenable to treatment, are those cases in which the attacks are of short duration and frequent. For these hot packs are often useful. Pilocarpin is an uncertain and, in some cases, a dangerous remedy ; though, no doubt, it sometimes is very valuable. But diaphoresis may readily be obtained by other means less depressing. A uræmic symptom quite as formidable as convulsions is vomiting, uncontrollable and incessant. Although central, it may be stopped by local treatment. All nourishment by the mouth should be stopped, and thirst quenched by ice or hot water alone. Bismuth and soda, and hydrocyanic acid, may be tried, or small doses of spirits of ether in water given every half hour; but I have found washing out the stomach with an alkaline solution of soda and borax, which dissolves and removes the irritating bile-stained mucus, more effectual. Since adopting this plan, I have never had any difficulty in stopping the emesis. A hypodermic injection of morphin was valuable in a couple of cases.

Most of the important complications of scarlet fever have now been noticed; and if the hints thus briefly and imperfectly thrown out may prove in any degree useful to a brother-practitioner in treating this omnipresent disease, I feel this paper has not been written in vain.

ART. XXIII.—*Non-Malignant Tumours of the Breast and their Treatment.* By O. JACOB, M.D. Translated by CHARLES GREENE CUMSTON, B.M.S.; Student-Associate of the Royal Academy of Medicine in Ireland; Assistant at the Butini Hospital, Geneva, Switzerland.

DEEP sutures, which were condemned with good reason a few years ago as being a cause of infection, are employed to-day by all surgeons. Prof. L. Tripier has had occasion to employ deep sutures in the mammary gland, in partial amputations of the breast. He found that, combined with the incisions, no matter how deceitful, they allowed at the same time to be completely fulfilled the indications in the special point of view for which they were intended, and at the same time they could give excellent results from the point of view of preservation and perfecting the shape of the breast. As they are applicable only to tumours obliging merely a partial amputation of the breast, I shall only speak of fibroma

and certain cysts, although sarcoma which obliges total removal is sometimes classed in the group of non-malignant tumours.

As this article is limited, I shall speak of certain points alone in the history of fibroma which have been almost completely left aside, and which, nevertheless, appear to play an important part in the pathogeny of these tumours. I particularly insist on the following points—(1), the relations of chronic mastitis with fibroma and cysts of the breast; (2), the pain in fibromata. I will then describe the methods of treatment employed in non-malignant tumours, and will finish with a description of the method employed by Dr. Tripier.

Fibromata are the most frequent tumours of the non-malignant type met with in the breast. Out of 34 cases Labbé and Coyne found 18 pure fibromata; 3 cysts, by retention of products produced by connective hyperplasia; 8 sarcomata, 4 of which had fibromata for a starting-point. According to these gentlemen, sarcoma is at its origin only a fibroma. The age at which fibroma appears corresponds to the sexual period of woman—that is to say, from twenty to forty years. Never, according to Billroth and Birkett, do these growths appear before puberty, and never after the age of forty; they develop most frequently between the age of sixteen to twenty-five. The fibrous tumours met with after twenty-five years of age may have formed during or after the first few years following puberty, but their origin passes more easily unnoticed when the nucleus of the tumour forms in the deep part of the mammary gland. Nélaton and Birkett maintain that unmarried life favours the development of these tumours; Labbé and Coyne believe the contrary. After Velpeau's statistics they are, above all, found in virgins and women who have never had children. Both breasts are rarely attacked at the same time; the right about as often as the left breast.

According to Labbé and Coyne[1a] menstruation interferes only in certain cases, and only to explain the development of the growth. This ætiology appears to me to have a considerable importance; it is nearly always the only cause which can explain the development of multiple fibroma in women who have never had children or abscess of the breast. If these patients are carefully questioned as to the condition of their breasts during the menses, they state that they experience often a greater tension of the organ, with redness, heat, swelling, and pain—characteristics which testify

[a] The numerals refer to the List of Works given at the end of this paper.

to a severe congestion, and even inflammation, of the gland. In fact, a veritable menstrual mastitis develops in the first stage, but later on it will leave in its stead fibrous nuclei. Under this influence of the genital reflex, the vessels so numerous in the mammary gland become dilated, and a more active diapedesis of the white globules takes place, or for those who do not admit Cohnheim's theory, a proliferation of connective cells in the connective tissue surrounding the acini. To this condition correspond the swelling, redness, &c., and a lobulated and indurated condition of the breast. A swelling of the axillary glands may also be observed, which must not be confounded with the aberrant portion of the gland, situated under the posterior border of the pectoralis major when this is congested. The phenomena of which I have just spoken disappear with the menses. But in time, under the influence of repeated congestion, nodosities persist in the breast, neoplastic elements are changed into connective and fibrous tissues, and a fibroma is formed. In the first few years one or both breasts are increased in volume in a diffused manner at the time of the menses; then after a certain time a solitary nodule is found by palpation; this grows, and it is the increase in size that brings the patient to the surgeon (Case IV.). I believe that menstruation has a great importance in the ætiology of fibroma, by producing a localised interstitial chronic mastitis. In fact, chronic mastitis is the first stage of fibroma.

According to Kennedy, a fibroma, even solitary, is nothing more or less than a circumscribed interstitial mastitis, in the highest degree of development, which in encysting ceased to communicate with the neighbouring parts, thus forming an isolated tumour, and developing as such. According to König[3], fibroma represents the last degree of this form of mastitis, which is far from being known to surgeons as it ought to be.

If more attention were given to this form of interstitial inflammation, the appearance of a number of tumours—such as certain simple or multiple cysts, and fibroma in breasts apparently healthy—would be easily explained, to judge from analyses of the cases which have been published.[4] At the onset of the disease (Case II.) there are found, in one or both breasts, round nodosities—more often quite hard or painful—which a proper treatment, well directed at this epoch, could cure. After a long insidious period, these attacks of chronic mastitis may follow a rapid course (Case I.), and the disease develops after a few succes-

sive attacks, often simultaneously in both breasts; the patient may, perhaps, not notice that the nodosities have developed, and it is only when they come to the surgeon that they are discovered (Case I.) It is, above all, at the time of the menses that new nodosities develop. The breast becomes painful, and quite often secretes a more or less watery liquid, sometimes resembling milk (Case V.). Often, also, there is tumefaction of the lymphatic glands.

If a histological examination of the nodosities is made, the morbid process in the connective tissue may be seen in all stages—the most recent degree is an infiltration of embryonic cells surrounding the acini, while the oldest degree consists of adult connective tissue. An examination of a section taken from Case I. showed a diffused lesion of sclerosis in the parts less attacked; the tissues surrounding the acini are healthy; there is an abundant infiltration of small cells, so marked in some points that the acini are compressed, atrophied, and the epithelium has undergone a granulo-fatty degenerescence. In the parts of the tumour removed by operation, corresponding to the tumours felt on the living subject, I found a pure histological formation of fibroma; on section the tissue was hard, and "cried" under the knife, of a pale yellow colour in some places, changing to rose. A few acini were dilated and more or less drawn out; the epithelium was more or less degenerated, and surrounded by a great number of connective tissue fibres placed concentrically to the acini, crossing each other, and in the spaces are seen connective tissue cells and a few vessels. This case shows well, it seems to me, the evolution of the morbid process in the connective tissue—in the first degree there is inflammation; in the second there is a metamorphosis of the cells into fibrous tissue compressing the acini; in the third all the cells are transformed into adult connective tissue and a veritable fibroma is organised.

Besides the preceding cases, in which the inflammatory morbid process ends in a fibroma, there are others in which cysts develop at the same time as the fibroma, varying in size, and sometimes quite numerous; sometimes the cysts alone form. In my second case, which, in the clinical point of view, resembles closely the cystic disease of Reclus, I found an example of an inflammatory morbid process ending at the same time in fibroma and cysts. After extirpation of the mamma I found numerous disseminated nodosities, and the gland presented sclerosis in parts. These nodosities offered the same characters as in the preceding patient—infiltration of embryonic cells, enveloping the acini and compressing them, and a

mass of compact connective tissue. Besides these nuclei of fibroma, I found tumours of various sizes—some the volume of a millet seed, while others were the size of a walnut, round, very hard, and in great quantity. When pricked with a needle these small tumours sent forth a jet of different coloured liquids with great force, and even in some places a noise was heard. These tumours were especially numerous on the posterior aspect of the glands. These small nodosities differ very much from the first, as they are cysts. Their formation has been well studied by Labbé and Coyne. These gentlemen have shown that cystic cavities, gaps, and spaces which are formed by means of the acini are to be found in the fibroma. The acini drawn and stretched in all directions by the development of peri-lobular connective tissue lengthen and broaden greatly. The excretory canals are effaced, in certain points obliterated and atrophied by the morbid process in the connective tissue; they dilate in the intermediary portions of their course.

The epithelium of the acini and that of the excretory canals does not generally remain indifferent to the continued irritation which exists in their neighbourhood, for they tumefy and proliferate. The acini are dilated by the liquid which they secrete, perhaps in greater quantity than normally, and which cannot be expelled. This liquid, by the pressure that it exerts at the periphery, may produce a degeneration of the epithelium, which falls into the liquid; and here it is found in the form of cells whose character is quite difficult to recognise, and which have undergone a granulo-fatty degeneration. This formation of cysts may remain localised in some spots, and is found especially in the excretory canals (Case V.), but it may be generalised, as well as in Case II. This morbid connective tissue formation ending in the organisation of cysts seems to me to apply to the formation of cystic cavities in certain cases of Reclus's disease. This idea seems to me justified by my second case. In this instance we find that the patient came into the hospital for the first time on the 4th of March, 1887, to be operated on for a tumour of the left breast, which had developed in three months. But from the epoch of her first menstruation the patient has always complained of pains in the left breast at the time of her menses, and the gland used to become enlarged and lumpy at that time.

The tumour which was found was about the size of a mandarin, hard, the surface nearly smooth, movable in its deep parts, and under the skin spontaneously painful, especially at the time of the menses,

and on pressure. The diagnosis was fibroma of the breast. Removal showed that it was a cyst with thick fibrous walls, filled with a reddish serous fluid. All around the cyst, and invading nearly the entire gland, are found numerous small cysts, some containing a butter-like matter, others a serous liquid. In the midst of these cysts are found numerous fibroma-nuclei composed of connective tissue.

The patient came back the following year to have the right breast, which is invaded in its turn, operated on. A hard, resistant movable tumour the size of a turkey's egg is seen, forming an appreciable projection exteriorly. Besides this tumour, others of variable size are discovered, and the breast feels as if it were full of grains of lead. A partial removal of the breast was performed, including in the part removed the largest of the tumours.

During the operation an accidental incision was made in the largest tumour, whence a pale yellow-coloured liquid squirted out. The piece removed was about the size of a fist, and the large cysts which had been incised had caused it to retreat. It was composed of a tissue comparable to that of a healthy gland. Only in the middle of this mass there was a great number of different sized cysts; the dimension of the one incised was that of a hen's egg. The small cysts appeared composed of a thin membrane, but which was very resistant when an attempt was made to break it.

Microscopical examination showed the connective tissue surrounding the acini to be normal, but nevertheless slightly thickened, and sclerosis was present about the clusters; great proliferation of the epithelium of the glands was noted. These are the lesions described by Malassez, Brissaud, and Cornil in the disease of Reclus. This patient, as I have already said, is a proof of the relations which exist between fibroma and cystic disease. This opinion was put forward by Trélat in a discussion which took place in February, 1888, at the Société de Chirurgie [5], when he said, "if we take up the clinical point of view, between the cysts of the acini of Reclus and fibrous hypertrophy, vegetating fibroid cysts and true adenoma, the differences are not great, or at least the distinction is difficult; all these types are bound together, and even coincide." Kirmisson also does not make cystic disease a special entity. It presents itself, he says, sometimes as an original disease of the epithelium, at other times as a consequence of different alterations, such as adenoma, fibroma, senile degeneration. And lastly, Phocas, in

his thesis, and with him Tillaux, say that cystic disease is a chronic mammitis (*maladie noueuse de la mamelle*).

Without going further, I would only say that the development of fibrous tissue in the mammary gland can explain in certain cases the pathogeny of Reclus's cysts. If they are not large enough to choke the glandular acini, they at least irritate them, and can produce a proliferation of the epithelium, hypersecretion and formation of cysts. This importance of inflammation of the connective tissue in the pathogeny of Reclus's cysts is to be found in a great number of cases of this disease in which, as Quain remarks, a great frequency of abscess of the breast is noted. According to this author cystic disease is simply a neoplasm; it is caused by irritating lesions primarily acting on the epithelium. He calls it "epithelial cystic cirrhosis," for he says, "if the interlobular connective tissue is healthy, the same tissue surrounding the acini contains sclerosis." So from what has been said I think I am able to furnish some proofs as to the influence of inflammation of the breast in the development of fibroma, and of the near relations which, in certain cases, unite the fibrous morbid process with the cystic disease of Reclus. This influence of inflammation of the breast on the development of fibroma, I have shown in women who have never had an abscess of the breast. I have spoken only of chronic mastitis consecutive to the menstrual flux; but fibroma may still be the termination of infectious inflammation. In the examples that I have cited, the white globules passed by diapedesis into the connective tissue, favoured by the simple congestion; the metamorphosis of these cells into adult connective tissue was made with great slowness. In infectious mammitis an important element, the microbe, intervenes; it is by this organised body that a more considerable proliferation of connective cells is brought about, cells which are destroyed and produce pus; or, if they resist, they undergo a rapid metamorphosis into connective tissue. Now the difference between infectious and menstrual mastitis, in the point of view of the formation of fibroma, is that, in the first case, the fibrous nodosities rapidly appear. They are hard, multiple nuclei, occupying generally both breasts, as Phocas has described in his thesis. He wished to make a special disease of this condition under the name of "lumpy disease of the mamma," although without reason, it seems to me, for this is not a particular disease—it is only an intermediary condition between puerperal chronic mastitis and fibroma. As Cooper and Velpeau have described it—according

to the latter, traumatism has a great influence on the development of fibroma, by producing a localised spot of mammitis, which evolves in the direction of the fibrous tissue.

This ætiology, accepted by a great number of surgeons, is, above all, applicable to completely isolated fibroma, appearing in a breast which has been healthy up to that time. Chronic mastitis produces multiple fibroma in women whose breasts are painful at the time of their menses. From the relations existing between inflammation of the breast and fibroma, which I have tried to point out, I shall deduce certain consequences when speaking of the treatment.

The commencement of development of fibroma more frequently than not passes unnoticed, and ordinarily the patient does not seek the surgeon until the tumour is about the size of a walnut or more. The tumour is lumpy and hard, movable in the deep parts and under the skin; no pain on pressure. It is only when the nerve-endings are surrounded by fibrous tissue that the pain appears; this is very frequent in cases of multiple fibroma. In Cases I. and II. the pain was at the first quite mild, and coincided with the menses, disappearing with them; then it preceded and followed them. After a time they persisted, and the patient suffered constantly. The pain was shooting and violent, exaggerated by pressure on the tumours. It irradiated nearly always in the muscles of the shoulder and arm (Cases I. and II).

In certain cases pain is precocious, even preceding the appearance of the tumours (Case I.); in others it appears at the same time as the tumours, while in some rare cases it is entirely wanting. There is a condition which greatly favours pain in fibroma of the breast—it is the soil in which these tumours develop. Nervous women are very subject to it; the patient in my first case is decidedly a neuropathic. In syphilitics, and, above all, subjects who have had malaria, it is well known how often neuralgia exists. Consequently, in patients who have painful fibroma, their antecedents should be carefully inquired into, and sometimes by applying a well-conducted treatment the pain may disappear.

A neuralgia of the third and fourth intercostal nerves, which are covered by the mammary gland, must not be confounded with a neuralgia of the breast, as has frequently occurred. The pain in the mammary gland may be of reflex origin, and it is not rare to observe patients who, having affections of the uterus or its appendages, complain of pain in the breast, which disappears when the genital affection is treated.

In Case II. the pain which had persisted after operation rapidly disappeared when the metritis from which she suffered had been treated. Consequently, pain in fibroma is not as rare as one might believe. When it exists, it is a sign of its non-malignant nature. In fact, the differential diagnosis between fibroma and scirrhus is very often so difficult that the question cannot be solved until a section of the growth has been made. Thus pain is a valuable symptom in the diagnosis. In fact, in fibroma I said that pain was precocious, that it preceded, or at least attended, in the great majority of cases, the tumour. In scirrhus, on the contrary, pain appears only at a relatively late period, when the glands are attacked, and compress the nerves. Patients are not alarmed by a painless tumour, which for the public is a sign of its being non-malignant, and the surgeon is consulted only when the pain appears—in other words, several months after the appearance of the tumour, when the chances of success are greatly diminished. Let me say, in conclusion, that fibromata can develop slowly, remain stationary for several years, and then suddenly enlarge; they can change into a malignant tumour, of which I have shown several examples. This possible termination of non-malignant tumours is an indication to surgically intervene when medical treatment is without effect.

Treatment.—This may be medical or surgical. The expectant treatment recommended by certain surgeons should not be the general practice. It should be tried only in timid patients, or when the tumour is too small to propose an operation to the person; at all events the case should be carefully watched.

Surgeons are of different opinions as to the value of medical treatment, and some discard it completely. Billroth says:—"A veritable and complete resorption is never observed; the different salves and frictions only irritate the skin, and cause it to adhere to the tumour. Instead of a cure an ulceration and more considerable growth is obtained." Others, on the contrary, as Lebert, Storck, Thierry, and Broca, attribute to medical treatment numerous and incontestable successes. These results, too apt to be forgotten to-day, should consequently not discredit a treatment which can render great service in certain cases. It has even been credited with possibly curing cancer. If it be true that it fails in a great number of cases, and many times because it is applied too late, there are other cases in which it may produce a cure.

I have shown that mastitis plays a considerable part in the development of fibroma of the breast, and it is, above all, against

this element that medical treatment fights; consequently it should be employed in all cases of multiple fibroma, when the gland is filled with hard nuclei, developed after repeated congestion of this organ. Under the influence of this treatment—especially if applied at the beginning, before the neoplastic connective tissue is transformed into fibrous tissue—congestion, chronic inflammation, &c., may be seen to disappear, and a partial absorption of the tumour to take place, and often even the entire growth to disappear completely. The cases in the thesis of Phocas show perfectly that medical treatment may be most useful in certain cases, for if it succeeds the patient avoids an operation which is not without danger, and if medical treatment fails the patient will more readily submit to an operation than if it were proposed immediately.

Medical treatment consists of iodide of potassium given internally, and mercurial and iodide frictions externally. The objection made to this treatment—that it produces mercurial salivation, and causes atrophy of the breast—do not appear to me to be serious, for this may be easily avoided by employing the frictions in a judicious and moderate way, in administering the iodide in small doses, and by not keeping up the treatment for too long a time.

The most important element for obtaining a cure is compression of the breast. Samuel Young was the first to employ it; Récamier, and especially Broca, made it popular in France. The latter invented numerous apparatus in order to perfect it. According to this author, this method gives excellent results in a short space of time; at the end of two or three days the improvement is marked, resolution continues quickly, and may be complete at the end of from two or three months.

Dr. D. Mollière, of Lyons, recommends us at the same time to employ sweating. This gentleman has by this means obtained rapidly-cured cases. "In cases of doubtful diagnosis," he says, "sweating should be provoked during several days, and chronic mastitis can be eliminated from the diagnosis, if the patient is not immediately cured."[6] He covers the breast with a salve containing pilocarpin, and then envelops it with cotton, and the whole is covered with waterproof linen. Medical treatment is to be employed only in fibrous tumours of the breast; it should be continued for two or three months, and it is only after this time that a surgical operation should be performed, if this treatment is unsuccessful

In speaking of pain as a symptom, I pointed out the importance as to the subject in which the tumour develops. Consequently it

is important to treat the general health, inquire into the antecedents, and look for diseases of the genital organs; thus sometimes a cure may be brought about and the pain diminished. Surgical treatment is that of choice in non-malignant tumours of the breast. Billroth[7] says, "as a principle, never remove the entire tumour in a breast, no matter what may be its nature, if it has existed for some time and continues to grow. It should be removed, because it extends more and more," and may take the form of malignant medullary sarcoma—a carcinoma. Tumours have been, and are still, encountered which for many years were considered as non-malignant, and which take on a malignant character later on.

It is better to remove a tumour of the breast, because it deforms the organ. Besides, on account of the knowledge so widely spread among the public, there are many women who lose all repose and tranquillity because they are afraid that their "tumour" may change into cancer. The surgeon should for this reason advise removal, if the patient is confident as to his decision. Reclus[8] is of the same opinion: "The surgical doctrine of to-day tends more and more to not allow neoplasms of the mammary gland to linger, even if regarded as non-malignant, for as the age of cancer approaches, that is to say, the menopause, all foci may give birth to a malignant tumour."

Among the surgical procedures formerly employed, I will only mention for memory's sake the subcutaneous breaking up of the tumour as performed by Marshall Hall; irritating interstitial injections practised by Luton, of Rheims, and compression, of which I have spoken. The only surgical treatment employed is removal of the tumour. Galien was the first to indicate the procedure for extirpating the breast, and recommended the knife. After him, in order to avoid loss of blood and the dangers of extensive wounds, surgeons preferred the slower procedures, such as cauterisation alone or employed with the knife.

Cauterisation was performed in two ways—either the neoplasm was directly attacked, or linear cauterisation was performed. For the first method Mance employed the salts of arsenic; Landolfi, of Naples, recommended a paste composed of chloride of zinc, bromine, chloride of antimony, and chloride of gold. Girouard, of Rheims, who brought to great perfection the method called linear cauterisation, enucleated the tumour by squeezing it between two steel blades, and then destroyed the pedicle with Vienna paste. This was nothing less than removal of the tumour—the caustic replacing

the knife. I will mention, while speaking of cauterisation, removal by means of Chassaignac's ecraseur, the elastic ligature which is due to Sylvestri, of Padua, and the galvano-cautery. All these procedures, which a few years ago were employed with good reason, are to-day left aside by nearly all surgeons, and the knife is the only instrument employed.

When the tumour is enveloped by a layer of cells in which it is encysted, or if it is adherent to the gland two procedures may be employed. One is enucleation, the other is partial amputation of the breast. Enucleation, when possible, seems to be the operation to perform, for it is of a remarkable simplicity and without danger. In fact, the skin only is incised, leaving the gland untouched; nevertheless, according to Labbé and Coyne, this operation "is in contradiction with what pathological physiology teaches us as to the so-called adenoid tumours and the recurrences which take place. In fact, this neoplasm forms around the glandular lobules, whose connective tissue surrounding the acini was the starting-point of the hyperplasia, following some irritating morbid process. By performing enucleation a mass of glandular tissue is left at the bottom of the wound, which runs a great chance of undergoing the same metamorphosis as the parts removed." Now, on the other hand, the operation of enucleation is not so serious, even as a partial amputation of the breast, and which, as to shape, gives a good result; on the other hand, the danger of a recurrence of fibroma is too little feared, although Labbé and Coyne mention a case, but nothing proves in this case that this was a new tumour more than a recurrence. Consequently, this operation deserved to be practised, and, when possible, should be preferred to partial amputation of the breast, especially in solitary fibroma slightly adherent to the gland. According to Billroth the operation should be performed as follows:—The patient placed on the table, with a pillow under the trunk; if the tumour is not larger than a big apple, and the skin normal and movable, the tumour is tightly seized with the left hand in such a manner as to cause it to project under the skin, and an incision is made, following its longest diameter. After section of the skin the tumour forms a hernia from the incision, and is then freed by little incisions. It is then seized by the left hand with a Museux forceps, or by an assistant, and then drawn out. Its extraction is completed with the knife or scissors, the wound drained, and the skin sutured. When the tumour is limited, and when it cannot be separated from the gland with which it forms a mass, as in cases of multiple fibroma,

the glandular portion must be removed. This is partial amputation of the mamma, although after the lesion has extended to different parts of the glands; for under the influence of this intervention other hard nuclei are often seen to slowly diminish in size, and after a longer or shorter period to disappear completely. This is what happened in Case I.

Partial amputation of the breast may be of use in certain cases of the cystic disease of Reclus, especially in those where there appear to be direct relations with fibrous products of the breast. Case II. was perfectly and completely cured by partial amputation of the organ, and the piece removed showed clearly on examination that we had to do with a case of Reclus's disease. It is better, therefore, from an æsthetic point of view as well as from the gravity of the intervention, to select partial amputation in preference to total. This incomplete removal may suffice to bring about absorption of the remaining diseased parts.

To perform partial amputation of the breast, if the skin is movable, an incision is made, following the greatest diameter of the tumour; if the skin is adherent a flap should be made, by making two curved incisions, corresponding to the transverse diameter of the growth. The tumour being brought into view, one to two centimetres of the gland itself are excised in order to remove all diseased glandular parts, the skin is sutured, and a drain inserted. By this method patients always bear a mark of the operation, for the breast no longer has its ordinary shape. In the spot corresponding to the portion of the gland removed a depression exists; all the more visible the greater has been the removal. The breast is sunken in, and the nipple may retract, while the skin adheres to the deep parts. Such are the inconveniences of great importance, especially in young women, which led Professor Tripier to make deep suture of the gland and suture of the skin, that is to say, two planes of sutures superposed upon one another.

I will now describe this operation. Having shaved the armpit, and all necessary antiseptic precautions having been taken, an incision is made over the tumour, directed from above downwards and from behind forwards, parallel to, and following the external border of the pectoralis major; the length of the incision varies, but should not be so long as to reach the areola. After incising the skin and subcutaneous cellular tissue, the tumour is cut down upon, and the incision deepened, so as to come to loose submammary tissue, which is situated over the pectoralis major, separating it

Fig. I.

Fig. II.

from the glands. Both halves of the tumour are now separately removed with the portions of the gland which contain sclerosis. The portion removed (see Fig. 1) has the shape of a triangle, with the base situated at the periphery of the gland and the apex near the nipple. The size of the segment removed depends upon the extent of the lesions; in one case Professor Tripier removed one quarter of the gland. When bleeding is staunched, the first drain destined to assure the flow of liquids which may exist in the submammary tissue is inserted. This drain is placed under the gland, and is commenced by a counter-opening made in the external furrow; the other end of the drain reaches the wound made in the gland. When this drain has been introduced the gland is sutured with three catgut sutures; the first and third are at the extremities of the wound, the second in the middle (Fig. 1); this forms the deep or supporting suture. The catgut is introduced from without inwards, entering the surface of section of the gland. When this has been accomplished, the second drain is introduced, which forms a right angle with the first; it is placed in the gland, with the upper extremity directed towards the armpit, while the lower end passes out by the upper end of the cutaneous wound. The operation is completed by suturing the skin. This I will call the superficial or perfected suture. Three catgut sutures are inserted, while the intermediate ones are made with metallic wire (Fig. 2), the wound is washed, the drains are examined, to be sure that they can fulfil their functions, and a bandage is applied. This procedure is employed very often by Professor Tripier, for it is the most suitable for tumours situated on the supero-external side of the breast (Cases I., II., III., and IV.), and which, as has already been said, adhere intimately to the gland.

The advantages of this method are that the woman has no trace of deformity, or of the operation—an end which should be all the more sought for, because, as I have shown, the affection in which this procedure is employed occurs especially in very young women. The most marked deformity, when the suture is not made, is a crater-like depression over the portion of the gland removed; the shape of the breast is destroyed, for the gland being removed the breast lengthens and sinks in. By suture of the gland the circumference of it is continuous; an æsthetic result is positively obtained. The breast, which before the operation may have been flabby and pendant, becomes prominent, firmer, and raised up, after the operation (Cases I., III., and V.) In Case III. the right breast

contained a fibroma, and hung down lower than the left. To-day it is on the same level and equal in size to its fellow. One patient told me that she was delighted with the operation, and two years after she said that it had given her the breasts of a young girl. No other deformity is to be seen excepting a rose-coloured line caused by the incision, and this disappears after four or five years. The line of incision is the only trace of the operation, and according to the situation of the tumour may be so arranged as to be completely hidden. In Case VI. the tumour was situated near the nipple. Prof. Tripier made a curved incision in the line of demarcation of the skin and areola. When the skin was incised the curved incision became transverse, and the tumour was easily enucleated; the walls of the cavity thus formed in the gland by removal of the fibroma were sutured in such a way as to re-establish the continuity of the gland; drainage and suture of the skin. There was not a trace of the operation; the line of incision was lost in the junction of the skin with the areola. In this case the gland was sutured; although no part of the gland had been removed, and only an enucleation performed.

Prof. Tripier leaves no cavity in the mammary gland, and whatever may be the portion removed—a segment of the gland, an enucleable fibroma, cysts, &c.—he always sutures the walls of the cavity thus formed in order to avoid, as I have already said, a depression which might form on account of adhesions of the skin with the cavity. Besides the incision of the skin on the supero-external side of the breast, and the periareolar incision, an incision of the skin under the breast may also be made in the furrow separating the organ from the thorax.

This incision, suggested beforehand by Gaillard Thomas, was practised for the first time—at least in Europe—by Rouge, of Lausanne. Dr. Mollière, of Lyons, has often employed it. The breast being raised, the sub-mammary serous bursa is opened, and the tumour is attacked on its deep surface. This incision may be more or less prolonged, but always following the sub-mammary fold, so as to allow the breast to be turned back and to remove the desired portion of the gland. Mollière says—"The gland, left to itself, falls, and the cicatrix is hidden in the sub-mammary fold to such a point that, after the operation, the gland operated on and the healthy gland cannot be distinguished. The operation is relatively easy; nevertheless, it demands a certain experience with the knife when the tumour is situated high up—as, for example, between the breast and clavicle, and it is then especially indicated in an æsthetical point of view" (9).

Prof. Tripier has perfected this procedure by adding the suture of the gland, and a better result is obtained. Not only is there no trace of the operation, but the shape of the breast is corrected—it cannot sink in, and is raised at the same time (Case V.). This operation is excellent in every way, and allows tumours situated high up to be removed. In Case V. one could reach 6 centimetres above the nipple. At the same time it hides the line of incision, and by suturing the gland the external aspect of the organ is happily modified; consequently, it should be performed whenever the opportunity offers.

Case I.—Marie D., aged thirty-eight; admitted March 5, 1891. Patient is very nervous; menstruated at thirteen; has felt shooting pains in the left breast for one or two days. Married eight years ago; no children. In 1874 the patient received a violent blow on the left breast. From this time, at the epoch of her menses, the pain in the breast became violent; the left breast is larger than the right. Dr. Tripier was consulted in 1876, and prescribed a medical treatment, which greatly improved the patient for some months. But the pain returned; at first it was slight, and then increased in frequency and violence. Six months ago the patient again consulted Dr. Tripier, who found multiple tumours in both breasts, especially in the left, and of which the patient was not aware. Enlarged glands in both arm-pits; medical treatment produced no effect. The pain, which up to that time existed only in the left breast, appeared in the right as well. Four months ago the pain appeared in the muscles supplied by the brachial plexuses, more violent on the left side. The patient entered the hospital.

Present state.—Left breast more hypertrophied than the right; of normal appearance. On palpation in the supero-external region of both breasts, hard tumours are found. These cannot be isolated from the gland, with which they form masses of various sizes; the largest are the size of a walnut, and movable. The breasts, and especially the left one, are painful on pressure.

Operation performed on March 7th.—Partial amputation of the gland containing the largest tumours; deep suture of the gland, as has already been described. Histological examination of the portion removed, showed it to be a case of multiple fibroma, accompanied by chronic mastitis. The sequel of the operation was excellent; the bandage was removed the 17th of March. An effusion of blood was in the left breast, which slowly underwent absorption; it still existed the twenty-fifth day after the patient had left the hospital. Pain disappeared in the right breast, but was still quite sharp in the left, probably on account of the effusion.

The patient came back (May 20th) complaining of violent pains in

the left breast; the effusion had completely gone. As the patient was excessively nervous and a hypochondriac, an anti-nervous treatment was prescribed. The pains disappeared slowly; they were still slight on June 12th, when the patient left the hospital. The result of the operation from the æsthetic point of view, was excellent; the breasts were hard and well raised, and their shape is better than before the operation. The nodules have disappeared in the right breast; some still persist in the left.

Case II.—Rose G., aged thirty-six; menstruated at thirteen. Married; has one child which she could not nurse; has had one accidental abortion. From the time that the patient had her first menstruation, she had experienced, at each period, quite sharp pains in both breasts, which became large and lumpy. Three months ago, without any appreciable reason, the patient found a tumour in the left breast the size of a walnut, attended with pain, and enlarging so rapidly that she was obliged to enter the hospital. The tumour was about the size of a mandarin, hard, movable, spontaneously painful—more so at the time of her menses, and also produced by pressure. No enlarged glands. In the other breast a tumour of the same nature was found. Removal of the tumour of the left breast, consisting of a cyst. All around this cyst, and invading the entire gland, small cysts and fibrous nuclei were found, so that we were obliged to entirely extirpate the left breast.

The patient returned the following year, suffering exceedingly from the right breast, in which multiple tumours of various sizes were discovered. The largest of these tumours—the size of a turkey's egg—was irregular in shape, resistant, and its surface was covered with lumps, one being much larger than the others. The tumour occupied the external side of the breast, and extended nearly to the nipple. In the rest of the gland small, indurated points are found, feeling like grains of lead.

Operation performed June 5th, 1888.—According to Tripier's method, incision on the external side, removal of a quarter of the gland, deep suture, &c. The sequel of the operation was excellent; the examination of the tumour has already been given. The patient left cured. The hard nuclei, which existed in the other parts of the gland, were found to be slowly disappearing.

From time to time I saw the patient, who at the present time is undergoing treatment for metritis, as she suffered again from some pain in the right breast. This has completely disappeared since the treatment has been commenced.

Case III.—Marie G., aged twenty-seven; entered the hospital Oct. 28th, 1889. Menstruated at fourteen. At the age of fifteen she noticed by chance that she had a small tumour the size of a walnut in the external side of the right breast; it was painless, movable, and underwent no

changes at the epoch of the menses. After ten years' duration the tumour is the same; as medical treatment had no effect, an operation was performed in Dec., 1886, according to Tripier's procedure. The drains were removed on the eighth day, and the patient cured on the twelfth. She continued to come from time to time during two months, complaining of some slight pain in the shoulder and right breast, but this rapidly ceased. I saw the patient on April 26th, 1890. She was married in Aug., 1887; became a mother in June, 1888, and nursed her child for fifteen months on both breasts. The breast operated on furnished as much milk as the other one, and has given place to no painful or other symptoms. The breast operated on presents no difference from the other one. The skin is movable, and the only trace of the operation is a line two centimetres long, which is slowly diminishing; the shape of the breast is perfect, and absolutely resembles the other. The right breast, which before the operation descended more than the left one, is to-day on the same level with it.

Case IV.—Claudine G., aged thirty; entered July 12, 1887. Menstruated at sixteen; irregularly up to the age of twenty. Married; one child, which she did not nurse. The *début* of the present affection dates back seven years; commenced by a painful gland in the armpit. Some time before this the patient received a blow on the breast. The pain in the armpit lasted until the spring; at this time the patient had attacks of shooting pains in the left breast several times during the day. At the same time she perceived that there was an indurated spot in the upper part of the breast; this tumour, not quite so large as a silver half dollar, was very sensitive on pressure. The patient used every possible and imaginable means to suppress it without obtaining any great relief. She entered the hospital for an operation. The tumour has remained stationary, and is movable under the skin.

Operation performed July 15.—Following Tripier's procedure, the gland, which had, macroscopically, a normal appearance, was cut down upon; nevertheless, on section it has a sensation of resistance greater than the normal, and the glandular *cul-de-sacs* project; the connective tisssue seems thickened.

July 20.—The pain is considerably better, and diminished progressively.

July 24.—It had ceased, and the patient was nearly cured, only the course of the drain is not yet closed. The shape of the breast is as perfect as possible.

Case V.—Dauphiné N., aged thirty-two; entered April 30, 1890. Menstruated at thirteen regularly. At about the age of fifteen, at the epoch of the menses, the patient noticed that a few drops of bloody liquid flowed from the right breast, without there existing either tumour or pain; in the interval of the menses all disappeared. Married at twenty-

seven; first gestation twenty-eight, and a second one year later. The patient nursed her first child entirely, a little more with the left than with the right breast; because, she tells us, the nipple of the left organ was longer than the other. A year and a half ago she sustained a blow on the right breast; two weeks after this she noticed a tumour the size of a hazel-nut situated in the internal region of the areola; it was entirely painless, and slowly increased in size. Four months ago the discharge from the breast, which always appeared at the epoch of the menses, ceased, and the tumour rapidly enlarged. At the time of the examination at the hospital the left breast was a little larger than the right; the nipple was retracted a little, but on stretching the skin it was made to project. On palpation, a crescent-shaped tumour was found in the internal region of the breast, extending above and below the nipple, which was compressed in its concavity; it appears to surround the galactophorous canals. This large tumour is hard and lumpy; no adhesions. By pressure a drop of serous liquid was expelled from the nipple. No enlarged glands; no pain.

Operation performed the 6th of May.—A transverse incision 12 centimetres long is made in the submammary furrow. The tumour is laid open to view, and enucleation attempted, but is unsuccessful, and a careful dissection of the part becomes necessary; an accidental incision made in the tumour caused the escape of a brown-coloured liquid. This proved that we were in the presence of a cyst, and a slow and difficult dissection was made. It was formed by the galactophorous canals, which have sent forth ramifications in all directions. Under the nipple the cyst was so superficial that the knife was only a millimetre from the skin. We were obliged to go as far as 6 centimetres above the nipple. When the cyst was removed the wound was washed with carbolised water; a deep drain was introduced by a counter-opening made in the axillary line. Deep suture (with catgut) of the shell which had enveloped the cyst. Superficial drainage; section of the skin.

En résumé, this was the same procedure as for a removal of a segment of the gland. The patient left May 23, completely cured. No apparent trace of the operation; the breast operated on, which descended lower than the other organ, is now on the same level; the nipple is not retracted.

Case VI.—Marie D., aged forty-five; hereditary tubercular antecedents. Married twice; has two children. The last labour was in 1880, followed by an abscess of the breast. In May, 1887, she found a tumour the size of a large walnut in her right breast, causing sharp pains extending down the arm of the affected side. On examination of the region a small tumour, quite movable in the deep parts and under the skin, was found. It was situated in the lower part of the breast; above quite an extensive and diffused induration of the gland was discovered.

In the corresponding arm-pit two or three large and indurated glands are found, and which escape from the finger when pressed. Nothing in the sub-clavicular region. The last-mentioned symptoms are all attributed to the abscess of the breast at the last labour.

Diagnosis.—Adenoïd tumour of the breast. The treatment consisted of iodide of potassium internally, and a salve composed of the iodide and belladonna, *loco dolenti;* and as no result was obtained, an operation was decided upon. Prof. Tripier made an incision over the growth, and profited by the zone of the areola for hiding it. The incision was curved, followed in the boundary line between the skin and areola. When the cellular tissue had been cut through, the incision became nearly transverse; a layer of glandular tissue is divided, and the tumour was thus brought into view and easily enucleated. The cavity thus formed was drained, and the glandular tissue forming the anterior wall was sutured with catgut. The superficial tissues were sutured by means of metallic wire, after sub-cutaneous drainage had been established. Healed by first intention.

The patient left cured, with a perfectly-formed breast, and it is even less flabby and pendant than the healthy organ. The patient was seen last June. The cicatrix is hardly to be seen, and is reduced to the proportions of a simple scratch; both breasts are exactly the same in shape. The histological examination of the piece which was removed showed it to be a case of typical fibroma, containing numerous cystic dilatations and spaces.

Chronic inflammation of the breast, developing under the influence of menstruation or the puerperal condition, may end in fibroma or multiple cysts. Traumatism, by producing localised mastitis, can thus produce fibroma or solitary cysts; *à fortiori*, when the preceding causes exist. The affection, if taken at the outset, can be greatly improved and even cured by a local and general medical treatment, applied both at the same time. If it remains without effect, surgical treatment is necessary—by enucleation if it be possible, but more frequently, partial amputation of the breast. Prof. L. Tripier has improved the procedure by employing in every case two drainage-systems and two plans of sutures—a sub-mammary drainage and deep suture of the gland; a sub-cutaneous drainage, and a superficial or cutaneous suture. This method gives excellent results as to the shape of the breast—all the more so as in certain cases it is easy to hide the line of incision either in the sub-mammary fold, or in the line of junction of the areola with the skin.

Works Referred to.

[The numbers correspond to those in the text.]

[1] "Tumeurs bénignes du Sein."
[2] G. B. Schmidt. "Beiträge zur klinischen Chirurgie."
[3] "Pathologie Chirurgical Speciale."
[4] Idem.
[5] "Comptes rendus de la Société de Chirurgie." 1888.
[6] "Cliniques Chirurgicales."
[7] "Die Geschwülste der Brustdrüsen."
[8] "Cliniques Chirurgicales."
[9] Mollière. Op. cit.

THE TREATMENT OF DIPHTHERIA BY THE INJECTION OF THE ERYSIPELAS ALBUMOSE.

Dr. G. A. Bannatyne (*Glasgow Medical Journal*, Sept. 1891), struck by a report of cases of diphtheria successfully treated by Dr. Babchinski, of Kieff, by the inoculation of erysipelas virus, has tried a short but important series of experiments on guinea-pigs and rabbits. He draws the following conclusions:—1. That even although the diphtheria had a good hold of the animal's system, yet by injecting the erysipelas albumose it could be arrested. This was true, either when the symptoms were only beginning to show themselves, as well as when they were well marked and severe. The albumose acted apparently by killing the bacilli—at least it rendered the surrounding ground unsuitable to their development, and thus prevented their elaboration of chemical poisons. 2. It produces immunity, of how long duration he cannot say, as far more elaborate experiments are required to determine this point. 3. The dose varies from a $\frac{1}{5000}$ to $\frac{1}{750}$. If one dose is not sufficient, and in a few cases it will be sufficient, a second should be given, slightly larger than the first, and so on until no reaction is got after the injection. The first dose, he held, should not be more than $\frac{1}{5000}$ at most.

DEATH FROM ETHER.

A death from ether is recorded (*Medical News*, Philadelphia, LIX.-4, page 102) by Dr. Charlotte Brown. The patient suffered from fibroid tumours of the uterus, and was twice operated on with success under ether. After severe hæmorrhage, a third operation was recommended, and ether was again administered. Death occurred whilst the wire of the ecraseur was being slipped round the tumour. It is recorded that after the heart ceased beating there were a few weak efforts at respiration.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Local Government Board Report on the Influenza Epidemic of 1889-90. By Dr. Parsons. With an Introduction by the Medical Officer of the Local Government Board. London: Printed for Her Majesty's Stationery Office by Eyre & Spottiswoode. 1891. Pp. 324.

The literature of Influenza has reached enormous dimensions. First, when the malady was a novelty, came the stage in which typical cases of the disease were described. Then gradually came the period in which all the vagaries of the disease were recorded. We have read of the effects of Influenza on every organ in the body; of motor, secretory, sensory, and psychical results of the disease; and now the time has come to review the disease as a whole, to consider it with reference not only to one country but to the world, and, at least, to make the attempt to settle some of those problems connected with it which are at once so perplexing and so important—such as, the cause of its outbreak, its mode of spreading from place to place, the question whether it spreads directly from the sick to the healthy or not, means of prophylaxis, and so forth.

It is, therefore, with great pleasure that we welcome Dr. Parsons' Report as an attempt to carry out these investigations. It is the most important work which has yet appeared on Influenza as a whole. It is based on inquiries and investigations made in every part of the world, but especially in the British Islands. A printed list of questions relating to Influenza was sent to all the medical officers of health in England and Wales, communications were addressed to railway companies and other public bodies, much information was obtained from private sources. All this material has been most carefully worked up by Dr. Parsons.

The first part of the work is historical and geographical. Former epidemics are briefly referred to. Then the epidemic of 1889-90 is described at length. Influenza outbreaks were noted in May, 1889, in Greenland, Athbasca, and Bokhara. After that nothing was heard about it until October 15th, when it was reported as

prevailing at Tomsk, and by October 27th it had reached St. Petersburg; its progress through Europe and the other continents is well known; and occasional outbreaks in various places have not ceased to occur.

After detailed accounts of the epidemic in every part of the world, Dr. Parsons' general conclusions are as follows:—

"1. The general course of the epidemic in the northern hemisphere has been from east to west (*i.e.*, in a direction contrary to the prevailing surface wind) and from north to south. In the southern hemisphere its course has been from south to north.

"2. It would appear to have followed, on the whole, the lines of human intercourse, the capitals and important towns in each country being attacked before the provincial towns and rural districts.

"3. The epidemic has not travelled faster than human beings, parcels, or letters could travel.

"4. The disease has prevailed independently of season, climate, and weather. Summer and winter, heat and cold, drought and moisture, have no effect on it.

"5. The epidemic at its commencement has in most cases been recorded to have been preceded for a few days or weeks by a succession of scattered cases, the number rapidly multiplying into an epidemic. No unquestionable instance is recorded of the epidemic having commenced suddenly with a large number of simultaneous cases in a place previously free from the disease.

"6. The cases at the commencement of an epidemic have often been described as mild. Later on, the cases have manifested themselves more severe, and relapses and dangerous complications have occurred. The mortality during the prevalence of the epidemic has been largely in excess of the average, being swollen not only by the deaths directly attributed to Influenza, but also by a great increase in those from other diseases, especially of the lungs and heart.

"7. The progress of the epidemic over the globe, taking Russia as its starting point, has been more rapid than that of previous epidemics."

There is a very full account of the symptoms and clinical history of Influenza, illustrated by tables referring to outbreaks in various localities and institutions. The most usual length of the stage of incubation was from two to three days, but there are many exceptions to this average. For clinical purposes the disease is divided into three groups:—

"1. Nervous, the prevalent form in the epidemic of 1889–90, characterised by great depression, and severe pains in the head, spinal region, and muscles.

"II. Catarrhal, marked by coryza, and tendency to congestion of the respiratory mucous tract.

"III. Gastric, especially noticed in children, and marked by vomiting, diarrhœa, and other symptoms of gastro-intestinal disturbance."

With regard to the bacteriology of Influenza, Dr. Parsons believes that the germ of this disease, if there be such, has not yet been discovered.

The most interesting chapter in the book is that on ætiology, in which the mode of propagation of the disease is discussed. It is here that the wealth of material at Dr. Parsons' command is most manifest: there are reports from town and country districts, from railways and fishermen, from lighthouse-keepers, and from London Hospitals—in fact, from all sorts and conditions of people. The hypotheses which have been or might be put forward as to the mode of propagation of the disease are thus classified:—

"A. Atmospheric:—
  "1. Climatic conditions, weather.
  "2. Aerial poison, miasm, malaria.
"B. Communicable:—
  "1. Direct, from person to person, or by fomites.
  "2. Mediate, the poison derived from human bodies being capable of multiplying in a suitable medium outside the body, like cholera or enteric fever.
"C. Evolved from some commonly present disease under unusual (? atmospheric) conditions.
"D. Zoogenous:—
  "1. Derived from equine 'influenza.'
  "2. Carried by migratory birds.
"E. Dietetic:—
  "Caused by eating Russian oats."

All these theories are discussed at considerable length, the facts on which they are based, and the arguments for and against them being clearly given. We cannot attempt to follow Dr. Parsons through these arguments. They occupy 38 pages, and are well worth reading in the original. His conclusions, however, are most important:—

"I am of opinion," he says, "that the epidemic has been propagated mainly, perhaps entirely, by human intercourse; though not in every case necessarily from a person suffering from the disease. I see no sufficient ground for believing in that world-wide spread by atmospheric agencies which has been so generally assumed. I do not say that the

contagium once imported into a locality may not propagate itself outside the human body in such media as damp ground or air contaminated with organic exhalations, but the fact of adjoining communities suffering at different dates seems opposed to the poison travelling far through the air. I do not find sufficient evidence that the recent epidemic has anywhere commenced suddenly with a large number of simultaneous cases, unpreceded by any previous ones, and I think that the rapidity with which influenza develops into an epidemic may be accounted for by its short period of incubation, by the comparatively general susceptibility to the disease, and by the existence of numerous slight and unrecognised cases. I do not, however, wish to exclude the possibility that the specific germ of the disease may multiply in appropriate media—*e.g.*, in damp, organically-polluted, confined air—outside the human body."

Most of the rest of the Report is taken up with abstracts of reports from medical officers of health of counties and districts, from railways, institutions, the navy, &c., &c. There is a postscript on the outbreaks of the disease in England and elsewhere in the spring and early summer of 1891.

With regard to prophylaxis, considering the number of those attacked, and the general mildness and low mortality of the disease, Dr. Parsons does not think any general attempt to cut short an epidemic by isolation of those affected would be possible or even advisable. In some cases, however, as in the case of those who from their age or infirmity would be very bad subjects for influenza, isolation has been practised with success. We are again reminded that the disease falls most heavily on those who are worn out in mind or body, and that to fight against the disease is a serious mistake.

In conclusion, we must congratulate Dr. Parsons most heartily on his Report. It must be looked on as the classical Text-book of Influenza.

Clinical Lectures on Surgical Subjects. By Christopher Heath, Holme Professor of Clinical Surgery in University College, London. London: J. & A. Churchill. 1891. Fcap. 8vo. Pp. 326.

These Lectures were delivered from time to time in University College, and are here reprinted from the various medical journals in which they originally appeared. They are dedicated to Mr. Erichsen, Mr. Heath's predecessor in the Chair of Clinical Sur-

gery, and are ushered in with the modest hope that "they may prove of interest to those who heard them." We think they will prove of interest to a wider circle, for, while retaining the special form of clinical teaching, they show everywhere the solidity and grasp of a surgeon of wide experience and of originality of thought. Among the subjects treated we may refer to an excellent account of "Sacro-iliac Disease," "On Cases of Sarcoma," "On Common Diseases of the Breast," "On Tumours of the Scrotum," and "On Aneurysm," to give our readers an idea of the scope and character of the volume. The work is convenient in size, is well and clearly printed, and is just the sort of book that can be conveniently taken up in an idle moment in the assurance that some practical hint will be found in it which will be worth remembering.

Le Végétarisme et le Régime Végétarien rationnel : Dogmatisme, Histoire, Pratique. Par le Dr. Bonnejoy (du Vexin) ; de plusieurs Sociétés savantes, Médecin de l'Hospice de Chars (Seine et Oise), Membre de la Société de l'Archæologie Lorraine, &c. Précédé d'une introduction par le Dr. Dujardin-Beaumetz, de l'Académie de Médecine, Médecin de l'Hôpital Cochin, Membre du Conseil d'Hygiène de la Seine, &c. Paris : Baillière et Fils. 1891. 12mo. Pp. 341.

Although Dr. Dujardin-Beaumetz looms largely on the title-page of this systematic work on Vegetarianism, his material contribution is small, and his support of Dr. Bonnejoy's principles goes but a little way. His preface occupies two pages and a half, in which he declares himself a vegetarian only for therapeutical purposes, confesses that he cannot agree with the vegetarians in their views of the good effect produced upon the intellectual and moral faculties by exclusive vegetable-eating, and opines that a man may be virtuous even though he eats meat. Himself a vegetarian on account of his health, he had laid down in his lectures that vegetarianism applied to a healthy subject, in the European climate, is a mistake ; but this, our author maintains, was merely a concession to popular prejudice.[a]

M. Bonnejoy's vegetarian trumpet gives no uncertain sound.

[a] In another passage of these lectures (delivered last year) he makes a statement which will surprise, and perhaps amuse, "old Indians" :—"Nous voyons l'Anglais, mangeur de viande . . . quand il habite son pays, devenir malade quand il habite les zones torrides comme l'Inde, où il est forcé de devenir alors végétarien."

This volume is the ninth which he has given to the world on the subject to which he has devoted himself, and in it will be found abundant evidence of his industry and enthusiasm. Let us state his thesis in his own words:—

"I shall prove in the course of this work that 'animal food is not the best form of aliment,' that, on the contrary, it is, physically, the source of degenerations and of innumerable diseases which oppress necrophagists. Morally, 'alimentary murder'[a] is, as proved by abundant evidence, the source, in man, of every vice, of hereditary insanity, of degeneracies—alcoholic, morphinic, &c.—whose rising tide justly terrifies the thinker and the moralist, powerless to arrest them. Vegetarianism, a doctrine essentially favourable to the moral development of man and to the healthy play of his natural faculties, is altogether opposed to those disastrous habits, direct consequences of the exaggerated necrophagy of the day" (p. 3).

Our author deplores the neglect with which vegetarianism is treated in his own country, where its "disciples are isolated and sprinkled amongst the learned societies and the liberal professions." "An unreflecting and hide-bound necrophagic prejudice" prevails in France. Elsewhere and especially in England—as we learn with some surprise—the cause is winning all along the line. Here the reform has already told upon the physical aspect of the people: "Chez eux, on ne rencontre plus ce type bouffi par l'absorption outrée des '*beef-steack*' qu'on y remarquait autrefois." Drunkenness also is diminished, being incompatible with vegetarianism. In Paris the visitor to the cold baths on the banks of the Seine will see to what "the Apollonian type of man" is come, in consequence of growing necrophagy; and there it will be noticed that deviation from the Grecian type of beauty is more marked in the wealthy classes, which are necrophagous to excess, than in the poor people, vegetarian by necessity. Physicians, and dressmakers, know to what the vegetarian norm, represented by the Venus of Milo, has been degraded in the modern necrophagous female of Paris. To the same cause our author attributes the low size of the Parisian population and the lowering of the standard for conscripts. *Post hoc ergo propter hoc* is the fallacy that doth so easily beset the physician.

There are vegetarians from sentiment, as well as vegetarians from conviction that necrophagy is injurious to the necrophagist.

[a] This impression is childish. The essential element of "murder" is *malice*, as Whately long ago pointed out in commenting on the absurdity of styling suicide "self-murder."

The former are actuated by love of the animal that is eaten rather than by regard for the eaters. Such was Ménard, who published "L'Ami des Bêtes" in 1814. He tells us that man, who ought to treat the lower animals as a paternal king treats his people, is their tyrant, their murderer, their devourer; that he slays without a shudder, and so on. The result is debasement, physical and moral. A flesh-eater is necessarily stupid and ferocious; while one who feeds on milk, on vegetables, and fruits, "doit être délicat, spirituel et sensible." Such was our own Dr. Anna Kingsford, who enjoyed the right of private *entrée* to the columns of our grandmotherly contemporary, the *Spectator*. She, Dr. Bonnejoy tells us, carried her sentiment so far that she would wear nothing made of leather. A Buddhist by conviction, she believed in metempsychosis, and, firmly persuaded that she had been a guinea-pig in her previous existence, she always carried about with her, in a bag specially adapted to the purpose, a specimen of this intelligent rodent. Mindful of her sufferings at the hands of physiological experimentalists in her former life, she founded the Anti-vivisectionist League. If sentimentalists of this type were pervious to reason, they would see that the sum of animal happiness is enormously increased by "necrophagy." It is better, even from the ovine point of view, that twenty sheep should lead happy lives terminated by hæmorrhage, than that five should die of old age.[a]

The progress of the cause in England fills Dr. Bonnejoy with delight. In 1740, Dr. Cheyne published an essay in London, in which he advocated vegetarianism. He declared that the slaughter of animals for food implied a heart of stone, a barbarous and ferocious disposition, and that it is impossible to distinguish, logically or morally, between eating the flesh of the lower animals and cannibalism. He lived himself on milk, tea, coffee, bread, butter, salad, cheese, fruits, and seeds, potatoes, turnips, and carrots. He attached great importance to the therapeutical use of the system, asserting that, in his experience, it had rarely failed to be beneficial in cases of gout, rheumatism, carcinoma, scrofulous affections, neuralgic colic, epilepsy, hysteria, melancholia, tuberculosis, and in the later stages of every chronic disease. Dr. Bonnejoy goes much further than this, giving a list of thirty-five diseases or morbid conditions relieved by the diet he recommends.

[a] "There is much talk of the misery which we cause to the brute creation; but they are recompensed by existence. If they were not useful to man, and therefore protected by him, they would not be nearly so numerous." —Dr. Johnson.

In spite, however, of Dr. Cheyne's authority, his countrymen continued to wallow in necrophagy for 150 years—"se sont abandonnés à une nécrophagie vraiment outrée." Now, "ils sont revenus de leur erreur, et aujourd'hui donnent l'exemple consolant de la population le plus végétarienne de l'Europe." In 1842, Gleïzès, one of the great apostles of vegetarianism, shook his head in sadness over the English. "Unhappy people," he said, "meat is destroying them. See them, like frozen serpents, seeking sunshine everywhere out of their own island! But 'tis in vain, they carry the poison with them. It is another warmth, another light, they need; and their eyes, confused by crime, are incapable of perceiving it." Four years after the death of Gleïzès the Vegetarian Society of Manchester was founded, whose motto is V.E.M.—symbolical of "Vegetables, Eggs, Milk." It enjoys a revenue of £2,000 a year, maintains a journal—*The Vegetarian Messenger*—and propagates its doctrines also by lectures and pamphlets. It has a branch in America, and 18 affiliated societies in England. The reproach of "necrophagie vraiment outrée" is wiped out. Of all the whimsicalities which (mixed with the fruits of learning, research, and some knowledge of dietetics) this book contains, perhaps the most whimsical[a] is the explanation of Ovid's mysterious exile. Ovid was a convinced vegetarian; and, in the 15th of the "Metamorphoses," he puts his own views into the mouth of Pythagoras. This amounted to censure of the necrophagic habits of the court. Augustus felt the palpable hit, was deeply offended, disgraced and banished the vegetarian poet. Of course he did not put forward the real reason for his decree, and it has hitherto been wrapped in obscurity. The truth is now revealed. Pythagoras's objurgations against the "horrible crime" of alimentary murder were taken by Augustus "pour une satire déplacée des mœurs nécrophagiques de lui-même et de son entourage."

It is difficult to treat vegetarianism, or its twin craze teetotalism, with the seriousness which the sincerity and earnestness of the advocates of these half-truths seem to deserve. So long as they

[a] Perhaps we should give the palm to the argument in favour of vegetarianism derived from the family disagreements in Adam's household. "Cain," says Dr. Bonnejoy, "the first murderer of animals, was also the murderer of his brother." Theologians have hitherto, following Moses, held that Cain's victim was the animal-murderer, and Cain himself a pronounced vegetarian. The skins, too, wherewith our first parents clothed themselves before Cain and Abel's time, seem to exonerate the latter from priority in "animal murder."

fight for moderation in the use of animal food, or temperance in the use of alcohol, they will have the hearty support of all of us; but we cannot follow them down the descent from enthusiasm to fanaticism. They injure their own cause by the extravagance of their arguments and assertions. When the temperance lecturer maintains that the wine that made glad the heart of man at the Cana marriage was some unfermented nastiness, or the vegetarian traces most of the diseases in the College of Physicians' list to beef and mutton, he discredits his cause, and weakens the effect of his advocacy of moderation. Neither can expect to convert mankind. Every human being eats fish, flesh, or fowl, when he can get it; and every human tribe, on first emergence from savagery, has proceeded "to mix a drop of drink"—to invent an alcoholic liquor. The teetotaller will make a few more converts than the vegetarian, because the effects of alcoholic excess are more real and obvious than those of eating too much meat; but the task of persuading civilised mankind to live on vegetables and water—even eked out with eggs and milk—is hopeless.

Modern Abdominal Surgery. The Bradshaw Lecture delivered at the Royal College of Surgeons of England, December 18, 1890. With an Appendix on the Castration of Women. By SIR SPENCER WELLS, Bart., F.R.C.S.; Surgeon to the Queen's Household. London: J. & A. Churchill. 1891. Pp. 51.

THIS Lecture, which now appears in pamphlet form, from the able and authoritative pen of Sir J. Spencer Wells, was designed evidently with a twofold object. First, to impress on his hearers the truly marvellous strides which abdominal surgery has made in the last fifty years; and, secondly, to call attention, as emphatically as he can, to the abuse of abdominal operations, especially with regard to oöphorectomy, and to repeat the warning to which he gave utterance in 1882, but which the practice of later years has shown to have been overlooked or neglected, but none the less needed. He then said, and he again repeats:—"Though I accept the principle, I see that the operation has a very limited application, and is so open to abuse that its introduction in mental and neurotic cases is only to be thought of after long trials of other tentative measures, and the deliberate sanction of experienced practitioners. . . . Except in cases where bleeding fibroids may call for the extirpation of the healthy ovaries, we might at

least require some evidence of the ovaries being diseased before consenting to their extirpation in the hope of curing any of those vague nervous disorders to which women are so subject, and which are often dispelled by moral treatment, or social changes, often benefited by measures which can have but little effect except on the imagination, often return after cure in any way, and leave the hopeless beings the prey of unscrupulous or illogically enthusiastic experimenters."

Nothing kills like ridicule; and we have a fine specimen of it in the closing page of the Appendix, which is a reprint from an article contributed to the *American Journal of the Medical Sciences* in 1886 by Sir Spencer Wells:—

"If we hold the mirror up to Nature," he says, "only changing the sex of the actors, the spectacle is not flattering. Fancy the reflected picture of a coterie of the Marthas of the profession in conclave, promulgating the doctrine that most of the unmanageable maladies of men were to be traced to some morbid change in their genitals, founding societies for the discussion of them, and hospitals for the cure of them; one of them sitting in her consultation chair, with her little stove by her side and her irons all hot, searing every man as he passed before her; another gravely proposing to bring on the millennium by snuffing out the reproductive powers of all fools, lunatics, and criminals; a third getting up and declaring that she found at least seven or eight of every ten men in her ward with some condition of his appendages which would prove to be incurable without surgical treatment; and a bevy of the younger disciples crowding around the confabulatory table with oblations of soup-platefuls of the said appendages; if, too, we saw, in this magic mirror, ignorant boys being castrated almost impromptu . . . should we not, to our shame, see ourselves as others see us?"

In the Address itself, which deals for the most part with the advances made during the past half century in abdominal surgery, we find that Sir Spencer Wells is still an advocate for the use of bichloride of methylene in preference to all other anæsthetics. He believes its employment will free surgeons from much unnecessary anxiety. Also he is not an advocate for either flushing out or for draining the abdominal cavity after operation. He has only twice *flushed* or washed out the peritoneal cavity with warm water, and in both cases he regrets having done so. "In a large majority of cases of removal of abdominal tumours, it simply adds to the amount of sponging required at the expense of more or less shock or depressing effect, and leaves the patient no better,

perhaps worse, than after careful sponging with soft, moist sponges."

These are only some of the points touched upon in an Address of great clearness and interest. We would strongly advise all surgeons, and, we might add, especially gynæcologists, to read this Address, and to lay to heart the lessons taught by one who has a right to speak with authority on the subject with which he deals.

Army Medical Department Report for the Year 1889, *with Appendix.* Vol. XXXI. London: 1891.

This Report for 1889 has been, as usual, born out of due time in the middle of 1891. Remonstrance is useless, and we must accept what we can get. It is not easy to feel interested in statistics of by-gone years, but we may briefly notice a few points. We observe that some of the cases and papers in the Appendix belong, very properly, to periods subsequent to that of the Report itself.

In 1889, the annual average strength of the British Army serving at home and abroad (exclusive of the Royal Malta Artillery, the West India Regiment, and the Gun Lascars at Ceylon and Hong Kong) was 198,448 warrant-officers, non-commissioned officers, and men, or with detached individuals included, 199,715. The admission-rate of this force was 1,006·9, and the mortality 9·17 per mille.[a] The inefficiency due to sickness is a good test of the healthiness of a station, and we have taken out of the Tables in pp. 2 and 3 the ratios per mille for some of the worst localities, arranged in the order of demerit.[b] The figures in parentheses are the corresponding averages for the decennium 1879–88. Thus, the general average of ineffectiveness from sickness for the whole army being 58·14 per 1,000 (55·19), and for the United Kingdom, 41·48 (46·34), the ratios for certain stations were as follows:—Straits Settlements, 99·84 (49·49); India, 87·36 (69·51); Mauritius, 86·43 (85·39); Ceylon, 66·80 (63·54); Egypt, 60·45 (74·92); Cyprus, 56·53 (44·08); S. Africa and St. Helena, 52·64 (52·93); West Indies, 52·49 (46·62). The amount of this "constant inefficiency" due to venereal affections is worth notice in passing. Simple venereal ulcer cost the country the

[a] This little army costs £18,000,000, about £160 per man. The German army of 2,000,000 costs less than £27,000,000.

[b] The *best* station is Bermuda, which was lately converted, temporarily, into a military penal settlement. Its ratio was 24·09 (34·59).

services of 163·57 men in 1889—130·03 in England and Wales alone. Secondary syphilis laid up in the United Kingdom alone, 332·63 men; gonorrhœa, 629·95. "Including all forms of venereal disease," the number constantly sick in the whole army was 1,710·10—about two battalions.

The primary examination of recruits appears, from some cause or other, to be defective. Of a total of 53,904 recruits inspected, only 31,455—583·54 per 1,000—were found fit for service. There is, however, some improvement in this respect upon the inspections of the previous year. The ratio of secondary rejections decreased for England and Wales by 56·74 per 1,000, increased for Scottish recruits by 2·52, and for Irish by 5·26. As to nationalities of recruits, England and Wales supplied 784 per 1,000; Ireland, 113; Scotland, 88. ("The Celts are gone with a vengeance.") We observe that the proportion of Irish recruits rejected on final examination was lower than that for the other sections of the United Kingdom. The physique of recruits is not improving—4,768 out of 10,000 were between 18 and 19 years of age; 394 were "boys under 17." The largest proportion, about one-fifth, were between 5 ft. 4 in. and 5 ft. 5 in. in height, 2,041 per 10,000: 284 less than in 1888. The proportion between 63 and 64 inches was 556 higher than in that year: 378 per 10,000 were 63 inches; 1,063 under 64.[a]

The sanitary condition of the Cyprus garrisons is, we are glad to observe, improving. There has been little fever for three years past. Much has been done in clearing, planting, sewering, and improving water-supply. The average strength in 1889 was 744. Admissions were 731·1 per mille; deaths, 1·34; discharged as unfit for service, 8·06; constantly sick, 56·53. The principal cause of admissions in this force was primary syphilis, to which 99 (133·1 per 1,000) were due. Besides these, there were 68 admissions for "simple venereal ulcer," raising the ratio for primary venereal sores to 224·5. "Including all forms of venereal disease, the total admission-rate was 371·0 per 1,000, a decline of 33·6 from the ratio in the preceding year, but an increase of 123·3 over the average ratio of the previous five years. The total ratio of constant inefficiency from venereal diseases was 34·95 for 1,000,

[a] In 1890, we learn from another source, 1,195 recruits were under 17 years of age; 15,386 between 18 and 19; 23,303 under 20. 5,062 were under 64 inches in height; 4,437 measured less than 33 inches round the chest; 8,235 weighed less than 120 lbs. 1,603 "men" were discharged for misconduct.

considerably more than half the ratio of constantly sick from all causes" (p. 73). Malarial fevers caused only 35 admissions—47·0 per mille; lower than in 1888 by 25·5; lower than the quinquennial average by 66·4.

The British garrison in Egypt in 1889 averaged 3,431 warrant-officers, non-commissioned officers, and men. Admissions were 955·4 per 1,000; deaths, 12·24; discharged invalids, 14·57; constantly sick, 60·45. All these ratios were less than those of the previous year, and much less than those of the preceding sexennial period. Of the two Egyptian stations, Cairo is considerably more unhealthy than Alexandria, the improvement since 1888 in the latter station being very great. Enteric fever, more prevalent than in 1888, caused 40·5 admissions per 1,000, 4·08 deaths, and 7·01 were constantly inefficient. The percentage of mortality from this disease was 10·1—an immense improvement upon the 20·8 of the previous year, and the 28·4 of the preceding quinquennium. Dysentery appears to be diminishing in virulence, and caused 36·4 admissions per mille, and 1·46 deaths. It was most prevalent in January, August, and September. Venereal diseases gave an admission-rate of 260·5, and rendered useless 17·68 men in every thousand.

We shall notice only one of the papers appended, and that briefly. It is a report by Surgeon-Major W. F. Stevenson, Assistant-Professor at Netley, on ten cases of lung tuberculosis treated with "tuberculin" last year. In these latter days it is refreshing to find anyone saying a good word for Koch's discredited remedy, so we shall quote Mr. Stevenson's results:—

"Almost all the cases lost weight at first, but regained the loss and put on more weight when either the reaction began to decrease or the treatment was omitted for a few days. Those cases in which the reaction, as gauged by the standard of temperature only, gradually decreased, notwithstanding an increase of the dose of fluid, were those in which the improvement in the local and general symptoms was most marked and most permanent. In conclusion, so far as one can judge from so small a series of cases, the treatment of tuberculous lung disease by Koch's fluid is most hopeful for those patients in whom the disease has not yet far advanced, and useless, or detrimental, in cases where the contrary obtains; that, in fact, it is useful only under the conditions laid down by Professor Koch for its employment. Signs of lung cavity I should consider to preclude the use of 'tuberculin.' The physical signs of consolidation, dulness on percussion, and increased vocal resonance and fremitus, were the signs in which least change took place" (p. 402).

No Army Medical Report would be complete without some remarks in the usual "superior" style upon the sanitary condition of Dublin. Unhealthiness due to overcrowding and neglect of sewerage and ventilation, until an outbreak of enteric fever roused torpid attention, is attributed, at least partly, to "noxious miasmata" arising from the neighbourhoods of the barracks, which are *mostly* "situated in the congested parts of the city, inhabited by the poorest section of the population." To how many of the barracks with which Dublin is so liberally endowed does this description apply? To two or, perhaps, three; and no attempt is made to show that the men quartered—say, in Ship-street—are more unhealthy than the regiment at Beggarsbush.

A Guide to Therapeutics. By Robert Farquharson, M.P., M.D. Fifth Edition. London: Smith, Elder, & Co. 1891. Pp. 417.

The present edition contains references to the drugs made official in 1890. The sections on Purgatives and Narcotics and some others on general therapeutics have been enlarged. Sir Joseph Lister contributes a paragraph on Antiseptics, and Dr. Donald Macalister one on Pyrexia.

As in previous editions the excellent plan is followed of printing the physiological actions and therapeutic effects of each drug in parallel columns.

All botanical and pharmaceutical details being omitted, a larger amount of useful and practical information is condensed into the book than otherwise would have been possible, but it seems a needless fault in arrangement that articles on Disinfectants and Antiseptics, Antipyretics and Refrigerants, should be placed almost at haphazard amongst the articles on individual drugs.

The Index is carelessly drawn up, and many useful cross-references are omitted. Although Dr. Macalister's *résumé* of his views on pyrexia is mentioned in the Preface, it is entirely omitted from the Index.

Golden Rules of Surgical Practice. By a Hospital Surgeon. Bristol: John Wright & Co. 1891. Pp. 54.

This may have proved useful to students who have neglected their hospital practice, and so have saved them from gross or dangerous errors. But the tendency of all such "guides" is to mislead; and

we can neither commend the aim of the author, nor recommend the booklet to the student as a short cut to that knowledge which every resident pupil should have learned from observation before assuming the responsibilities of his position.

History of Circumcision from the Earliest Times to the Present: Moral and Physical Reasons for its Performance. With a History of Eunuchism, Hermaphrodism, &c., and of the different Operations Practised upon the Prepuce. By P. C. REMONDINO, M.D. (Jefferson); Member of the American Medical Association, &c. Philadelphia and London: F. A. Davis. 1891.

MOUNT an author on his hobby and where will he stop? Of all writers the medical specialist is the most inveterate and irritating in his determination to ride his hobby over everybody. He respects no rule of the road; he does not give time to get out of his way; over you go the hobby-horse and its rider.

Of this type is Dr. Remondino, in whose eyes a prepuce is an abomination—an evidence of an arboreal ancestry—a begetter of all modern evils. To this flaccid flap of skin he ascribes a power of mischief that would tax the industry of Asmodeus.

Do you suffer from satyriasis? Off with the prepuce.

Are you sterile? Off with the prepuce.

Do you dread tubercle, syphilis, or epithelioma? Off with the prepuce.

Do you desire long life? Off with the prepuce.

As we read the one sole specific for all human ills, we involuntarily thought of a book lately published to advertise a quack remedy. And yet when we had finished reading the book we confessed that the few pages on congenital phimosis in Hey's Surgery, published in 1803, spoke more effectually for the operation of circumcision than Dr. Remondino's monograph, the reading of which is a great tax on the average student. It is redolent of midnight oil. Your mind is pained by the palpable effort to drag in allusions. His illustrations do not come naturally; they are far-fetched, and do not fit accurately into the text. It is not a case of bringing things new and old from a full treasury, but rather a hunt for scraps of information to furnish a feast for a hungry reader, and even then the scraps are not made into a savoury stew, but rather tossed into a beggar's bag, from which they come out cold, tasteless, saltless—an unappetising diet.

SOME RECENT PUBLICATIONS.

1. *The Diagnosis of Traumatic Lesions in the Cerebro-Spina Axis, and the Detection of Malingering referred to this Centre.* By B. A. Watson, M.D. Reprint from the *Medical News*, June 6, 1891. Pp. 22.
2. *The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and other Morbid Conditions.* By B. A. Watson, M.D. Reprint from the *Journal of the American Medical Association*, July 18, 1891. Pp. 23.
3. *Studies on the Action of Dead Bacteria in the Living Body.* By T. Mitchell Prudden, M.D., and Eugene Hodenpyl, M.D. Reprint from the *New York Medical Journal*, June 6 and 20, 1891. Pp. 36.
4. *Fragments de Chirurgie Abdominale.* Par le Dr. A. Delétrez (Bruxelles). Première serie de cinquante Laparotomies. Bruxelles: M. & T. T'sas, Sœurs. 1891. Pp. 33.
5. *Surgical Treatment of Intussusception.* By N. Senn, M.D., Ph.D., of Chicago, &c., &c. A paper read before the Ontario Medical Association, June 3, 1891. Toronto: Printed by the J. E. Bryant Company (Limited). 1891. Pp. 61.

1 and 2. In these two markedly iconoclastic papers Dr. Watson, as the result of experimental investigations on 141 animals, endeavours to prove the fallacy of the opinions generally held as to the remote effects of shock and concussion on the central nervous system. But in so doing he utterly fails to give, or even to attempt to give, any explanation of that anomalous train of symptoms which every surgeon has seen following after falls on the feet or back, or, most commonly perhaps, after railway accidents, where a psychical factor must undoubtedly be taken into account. The fallacy of reasoning from traumatisms artificially induced in animals during chloroform narcosis to those accidentally produced in the human subject is obvious to every one—except the author. Admitting the great harm that has been done by the writings of Mr. Erichsen on this subject, still these cases do from time to time occur; and when Dr. Watson can propound a theory based on clinical and pathological observation which will explain the muscular disturbance, amounting almost to paralysis, the alternate hot and cold waves—flushings and chills—the profuse sweating, the inequality of the pupils, exaggeration of reflexes, from which

such patients suffer—then he will be entitled to more consideration than when he merely comes before us with the bald statement—"It is not true, because *I* cannot produce the condition experimentally," which is the sum and total of his argument.

3. In this brochure Drs. Prudden and Hodenpyl, following up the researches of Wyssokowicz, Buchner, and other observers on the action of non-pathogenic and dead bacteria in living tissues—or more properly, the reaction of living tissue to foreign invasion—have given us the results of a series of experiments with dead tubercle bacilli. The bacilli were cultivated in glycerin-pepton-bouillon and on glycerin-agar-agar. A small portion of the growth was then mixed thoroughly with distilled water and sterilised by moist heat, lasting from two and a half to four hours. Portions of this were then injected subcutaneously, or into the peritoneal sac, or directly into the circulation through one of the aural veins. Appearances microscopically identical with those present in tubercle naturally induced were found in various organs, notably in the liver, and the bacilli were still capable of being demonstrated by the ordinary stains. The authors conclude that this peculiar property of the dead germs "may be due to the specific proteid of the germ cells, which is gradually set free as the germs disintegrate at their seat of lodgment in the tissues." They have not, however, succeeded in isolating this bacterio-protein. The following paragraphs sum up their views on this most interesting speculation:—

"It seems to us highly probable that the bacterio-protein of the tubercle bacillus, either living or dead, when set free by disintegration in the tissues is capable of furnishing that local cell stimulus which results in the formation of the various phases of these structures which we call tubercles and tubercle tissue. The slow growth of these structures would correspond to the exceptional structural invulnerability of the tubercle bacillus. These structures, which, as we have shown we can induce at will in the rabbit by the injection of dead tubercle bacilli into the blood-vessels, are morphologically absolutely typical of certain phases of miliary tubercles, even to the presence of stainable tubercle bacilli in them. . . . Miliary tubercles these structures are, but—and this is of vital importance—the animals do not acquire tuberculosis. It is not an acute infectious disease which we thus impart; there are no living germs to grow. The disease, if it is a disease, is not indefinitely progressive. The dead bacilli seem to act as foreign bodies simply, curiously stimulating, it is true, but only dead foreign bodies after all."

If these experiments are confirmed they will raise an important point as to the ætiology of acute miliary tuberculosis.

4. A series of brief records of cases of abdominal surgery, embracing such diverse subjects as nephrectomy, cholecystectomy, and cholecystotomy; ten cases of abdominal hysterectomy, and ten of ovariotomy; seven cases of salpingectomy, two of hysteropexy, and ten of exploratory laparotomy. Short accounts of the more striking cases and comparative tables of results are given. Altogether an interesting epitome of the abdominal work of a surgeon who is not a specialist.

5. Dr. Senn is such a recognised authority on this subject that everything that comes from his pen deserves to be studied with care and attention. This address is well worthy of the author. It presents in a clear and concise form all that is known on the subject of intussusception, both natural and artificial—the latter experimentally induced in animals. Dr. Senn strenuously urges early operative interference if reduction by the rectal insufflation of hydrogen gas has proved unsuccessful. Early operation means success; delay means surgical disaster and death. We would emphasise especially his caution as to the harmful effects of purgatives in all cases where the slightest suspicion of intussusception exists: increased peristalsis means increased involution of the gut.

Massage for Beginners, or the Masseuse's "Vade Mecum." Being Simple and Easy Directions for Learning and Remembering the Different Movements in this Art. By Lucy Fitch. London: Sampson Low, Marston, & Co., Limited. Pp. 32.

Some plain directions for massage of the different parts of the body (the fifty-eight recognised movements being described) form the chief part of the thirty-two pages; some general hints commence, and a few examination questions end, the book. It will not teach the art of massage, but may be found useful as an *aide mémoire* by those who have learned it.

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PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—George H. Kidd, M.D., F.R.C.S.I.
General Secretary—W. Thomson, F.R.C.S.I.

SECTION OF SURGERY.

President—H. G. Croly, President of the Royal College of Surgeons in Ireland.
Sectional Secretary—R. L. Swan, F.R.C.S.I.

Friday, November 13, 1891.

The President in the Chair.

Inaugural Address.

The President read an address on sarcoma, illustrating it with cases, and showing a number of casts, pictures, and microscopic preparations bearing on the subject.

Prostatectomy for Senile Prostatic Enlargement.

Mr. Tobin having, by reference to various specimens of enlarged prostate, which he handed round, shown that it is in cases where the middle lobe is movable, and consequently removable, that retention of urine is most complete, went on to discuss the various operations used for removal of the obstruction. He condemned all those done through the urethra as coming under the head of blind surgery, and being contrary to the spirit of the present day. The method of operating which he had successfully practised he described as follows:—The bladder having been explored by the fingers through a small supra-pubic incision, and the case being one suitable for operation, a wire doubled and bent to a suitable curve is passed through the urethra into the bladder. A straight sound, arranged to receive the wire and act as an ecraseur, is then slipped up along it; but its point, instead of being passed into the

bladder, is made to impinge against the urethral obstruction. Next, the double wire lying in the bladder is opened into a loop and slipped over the enlarged lobe, and is kept embedded round its base by means of two fingers passed through the abdominal incision. While this wire is being made, by traction on it, to cut its way through the part it encircles, the inserted fingers, helped by the point of the catheter, pressed against the spot it is desired to reach, regulate its direction. The following are the advantages of this operation:—

1. As much of the gland as interferes with the escape of urine is removed, and no more.

2. Such portion of it is removed in a satisfactory manner, for the wire starts from the point where the finger defines the obstruction on one side, and cuts up to the point where the instrument does so on the other.

3. A smooth surface, sloping into the urethra, is left instead of the more or less rough one that must result from taking away the gland piecemeal with a forceps.

4. There is very little hæmorrhage.

No brilliant results are to be expected from any operation, and one should be undertaken only as a last resource. When dealing with youth we may talk of a cure, when treating the aged we may consider ourselves lucky if we succeed in making them a little better.

Mr. Hamilton said he would be glad to know if the author practised distension of the rectum and bladder. He was of opinion that these proceedings are quite unnecessary. A surgeon with a schoolboy's knowledge of anatomy can enter the bladder with safety to the peritoneum, if he keeps close to the pubes, and uses his knife with care, and his index finger with resolution and intelligence. The bladder having been opened, the removal of calculi could be easily accomplished, as well as of growths projecting from the vesical wall—such as the middle lobe as we so frequently find it. But the difficulty is much increased when we come to deal with the symmetrical enlargement of the lateral lobes. In such conditions he thought the most efficient instrument would be Volkmann's spoon. The tissue of the prostate is friable, and easily broken down. This practice is open to two dangers—hæmorrhage and septic poisoning The first is to be guarded against by not scraping beyond the capsule so as to wound the veins of the prostatic plexus, so frequently varicose in this condition. The second can be obviated by careful antiseptic irrigation. Mr. Tobin had alluded to the condition of the lining membrane of the bladder in such cases. He (Mr. Hamilton) had great faith in the use of triticum repens, but the usual medicinal doses are simply inert. To be effectual it must be taken as an ordinary drink.

Mr. Wheeler said that Mr. Tobin's discourse might be considered under two heads—cases in which operation could be performed to permanently relieve, and those in which suffering could be alleviated and

life prolonged. Under the first class the obstructing growth of the prostate gland could be removed, in which surgical experience was limited. He had operated by supra pubic incision to give such permanent relief, and to remove two growths from the lateral lobes of the prostate. This patient suffered from vesical hæmorrhage, constant desire to void urine, and very contracted bladder. A supra-pubic incision revealed the growths, and also papillomata studded all over the surface of the bladder. The prostatic growths he ligatured and nipped off with a curved scissors. The ligatures came off during the operation, no hæmorrhage followed. The papillomata he rubbed of with a sponge; the bladder was drained by a soft tube through the pubic opening, one end being received into a urinal. This patient made a good recovery. A period of nine months having elapsed, he advised the pubic wound to be closed, but the patient felt so comfortable he would not consent. He had performed operations by the supra-pubic method to alleviate suffering and the trouble and irritation consequent upon eniarged prostate. In those unfit for further procedure he always used and preferred soft flexible tubes to silver instruments. Patients found them more comfortable. It was an advantage to steady the end of the tube in the bladder with some small weight; a shilling attached to the end of the tube answered well, and not only steadied it but sunk it to the lowest part of the bladder. Advanced lives were thus prolonged, and with comfort. It was by no means easy to clearly see the interior of the bladder by this operation. Artificial light was a great aid. His experience taught him that patients with the prostate enlarged passed water more effectually leaning on their hands and knees. In these cases he preferred draining the bladder above the pubes. The median operation did not afford so efficient a drain in cases of enlarged prostate, and after this operation the gland may get temporarily swollen. He did not agree with Mr. Hamilton that there was not any danger in wounding the peritoneum in contracted bladders. The operator cannot be too careful.

Mr. M'Ardle could not see the necessity for Mr. Wheeler's elaborate but unsurgical method of supra-pubic drainage while we had the simple but perfect tubes invented by Guinard for that purpose, nor could he agree with the opinion of that gentleman as to the thorough efficiency of supra-pubic drainage. There could be no doubt in the mind of any surgeon at all acquainted with this department of surgery but that perineal drainage properly carried out is the most perfect. So valuable is it that Keyes, of New York, devised a special means of conducting the perineal tube through in supra-pubic operations of the class under discussion. Mr. M'Ardle had yet to see an instance of supra-pubic drainage which was anything like complete in all the positions a patient may assume, while he found a properly applied perineal tube to effectually drain the bladder and allow the most thorough irrigation. Mr. Hamilton spoke

of Peterson's bag as if it were one of the essentials of this operation, while as a matter of fact it is not only useless in prostatectomy, but positively harmful. Experience of its use shows that the prostatic portion of the bladder is the point raised by the rectal bag, and its elevation means a narrowing of the field of operation. The proper support is obtained by the index and middle finger of an assistant pressing on the prostate through the rectum. Mr. M'Ardle could not agree with those who said that the number of cases demanding this operation were few. His impression was that, when the value of the operation described by Mr. Tobin became apparent, the cases demanding it would be found very numerous.

SECTION OF MEDICINE.

President—J. Magee Finny, M.D. ; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. Montgomery, M.R.C.P.I.

Friday, Nov. 20, 1891.

The President in the Chair.

Recent Advances in our Knowledge of the Ætiology of Diseases of the Skin, and their bearing upon Treatment.

Dr. Walter Smith read a paper upon modern views as to ætiology of skin diseases and their bearing upon treatment.

The illustrations brought forward were arranged under four heads :—

1. Some maladies hitherto ascribed to vague and unknown causes of internal origin are really traceable to infection usually from without. This was illustrated by the cases of—(*a*) erysipelas, (*b*) impetigo, and (*c*) boils and carbuncles. All forms of impetigo are contagious ; hence the term "impetigo contagiosa" does not represent a distinct disease.

2. What have been commonly described as different forms or varieties of disease are often really due to the co-operation of different causes. Thus, in acne, scabies, syphilis, and eczema, the pustular phenomena that may accompany these diseases are merely secondary results, due to the accidental inoculation of pus-germs. The relation of scrofuloderma to lupus is best explained by Unna's and Leistikow's theory that scrofuloderma is an affection caused by the symbiosis of staphylococcus pyogenes aureus and bacillus tuberculosis—*i.e.*, scrofuloderma is a case of "mixed infection."

3. Classification of diseases of the skin is rendered more accurate—*e.g.*, Sycosis. *All* forms of sycosis are parasitic, and we have (*a*) coccogenous sycosis, due to staphylococcus—the so-called non-parasitic sycosis

of authors; (*b*) phytogenous sycosis, due to trichophyton (ringworm of the beard), the so-called parasitic sycosis of writers; (*c*) bacillogenous sycosis (Tommasoli).

4. We can better see the reasons for much of our management of skin affections—*e.g.*, in the cases of ringworm, boils, and impetiginous affections.

Dr. M'Weeney cordially agreed with everything which Dr. Smith had said on the bacteriological side of skin diseases. His views on the subject of "mixed infection" were quite in accordance with those held by Babes and other Continental bacteriologists. Dr. Smith was to be congratulated on the use he had made of the facts that had been most recently established with regard to the ætiology of skin disease by Continental observers.

Dr. Frazer had tried extensively the sulphide of calcium in cases of boils and anthrax, and regretted to say it had failed to give any results such as writers would lead us to expect. Two different varieties of sycosis had been long familiar to him; the third he had never observed, which may be accounted for by its extreme rarity. It is satisfactory to find microscopic investigation explain the distinct features of these two affections, heretofore classed as sycosis, and usually confounded together.

Dr. J. W. Moore, in illustration of Dr. Smith's remarks as to the treatment of furuncles and anthrax by curetting, instanced the case of a lady, aged about 60, who suffered from anthrax of the cheek some eighteen months ago. Recognising the gravity of the attack, Dr. Moore recommended surgical treatment, and accordingly Dr. Charles Ball was called in consultation. He curetted the anthrax without delay, and the beneficial effects were simply magical—temperature and pulse-rate fell quickly, and a rapid and satisfactory convalescence followed.

Dr. C. F. Moore said he could corroborate what had fallen from Dr. Smith as to the effect of using clothes which had been in contact with disease germs.

Dr. Tweedy remarked, in corroboration of Dr. Smith's statement as to the antagonistic effect of erysipelas on lupus, that he had had under his care, some years ago, in Steevens' Hospital, a girl suffering from lupus of the nose, who, while under treatment, was seized with an intercurrent attack of erysipelas which resulted in the apparent cure of the lupus. The disease subsequently, however (four years after), reappeared.

Dr. Smith briefly replied.

An Attempt to explain the Effect of Climate on the Action of Anæsthetics.

Dr. C. F. Moore said the Hyderabad Chloroform Commissions, and the interesting and able paper of Dr. H. C. Wood, read before the Berlin International Medical Congress, drew attention to the influence of climate and other agencies on the administration of chloroform by inhalation,

and to the question as to whether its effect in fatal cases took place through stoppage of the heart's action, or upon the respiration.

The purport of this paper is to show that in addition to the beneficial influence of warm climates in rendering more diffusible the chloroform vapour, and so lessening its noxious effects, as advanced by Dr. Wood, the same influence renders the functions of the lungs less paramount in warm climates than in cold, owing to the greater activity of the hepatic and cutaneous organs in those inhabiting such regions.

Dr. Frazer wished to say he had seen the first case of ether administration in Europe at the Richmond Hospital, and had given the first dose of chloroform at the same hospital to a patient of Mr. John Hamilton. He had for a long time administered it at operations, and never had a single accident, which he attributed to giving his undivided attention to the exhibition of the anæsthetic. He has, however, in private practice met two cases of serious symptoms, both fortunately ending favourably; these were not due to the anæsthetic but to syncope occurring in various individuals as the effects of the anæsthetic passed off. He had to direct attention to the fact that some persons eliminated the anæsthetic more slowly than others; in one case, for example, the vapour of ether continued to pass off for at least three days. Under the late Sir D. Corrigan he had given it to many cases of *delirium tremens*, and the result was such that the practice was abandoned, serious symptoms invariably occurring, but none ending fatally. As for continued administration in a case of tetanus, he had aided in using it for upwards of two days; the chloroform gave relief, and enabled the patient to take food, but the disease progressed and ended fatally.

Dr. Moore, in reply, agreed with Dr. Frazer's remarks as adding to the interest in the subject, and stated that he is well aware that it is only in exceptional circumstances, as in Calcutta, that ether can be had in a warm climate.

The Section then adjourned.

KNIFE-BLADE FOUND IN THE BRAIN.

Dr. Richard Slee records (*Medical News*, Philadelphia, LIX.-4, page 102) finding in the brain of a man, who died of septic peritonitis from a bullet wound in the abdomen, the blade of a knife, which must have been there for years. It projected into the brain for the depth of an inch.

GASTRIC ULCER AND ICE-CREAM.

Dr. Hirshey reports (*Medical News* of Philadelphia, LIX.–6, page 155) three cases in the Clinic of Professor J. M. Da Costa, in which gastric ulcer was cured by a diet of ice-cream. The patient's craving led to its being given in the first case.

OUR EYES AND OUR INDUSTRIES.

By Arthur H. Benson, M.A., F.R.C.S.I.

(*Continued from page 417.*)

First, concerning the seating of scholars—

Since the publication of Dr. Cohn's important work, in 1867, on "Examination of 10,060 Children's Eyes," a whole school desk industry has arisen. In the Paris Exhibition of 1867 only three different models were shown. At Vienna, in 1873, there were 47 different kinds of desks, and at Paris, in 1878, as many as 71 were exhibited, thus showing the growing importance attached to this subject.

The three main points to be attended to in seating scholars at home or in school are (following Cohn):—

(1.) The seat must be of such a height that the vertical distance from the table equals the distance of the elbow from the seat bones, plus two inches.

(2.) The chair must be pushed so close up to the table that the upper edge of the table overhangs by two inches the fore-edges of the chair.

(3.) A footstool must, if necessary, be used, so placed that the foot rests flat upon it, while the knee is bent at a right angle.

Various mechanical contrivances have been invented to prevent the child assuming a faulty position while writing. Kallman's "Face Rest" can be screwed on to the edge of any table, and is said to be effective, and not uncomfortable.

And here let me enter a strong protest against the needless overwork of young eyes. Wholly indefensible is the practice of giving, as a punishment, passages to be copied out many times over.

Concerning Light—All investigations have shown and confirmed the facts that want of light and light not coming rightly are potent causes of eye troubles. Few schoolrooms have enough light. "There can never be too much light in a school."

Javal says the school must be flooded with light, so that the darkest place in the class may have light enough on a dark day." Cohn proposes as a guide that for every five square feet of floor in the room there should be at least one square foot of glass in the window, and this proportion to be increased if the situation of the school was such as to have bad light outside from high buildings situated too close, &c.

The ideal school-room, from an oculist's point of view, should have a glass roof, but if that could not be had, the light should fall from the left side of the writer. Cohn found that the narrower the street in which the school-room was situated, the higher the opposite houses, and

the lower the story on which the lessons were given, the more numerous were the cases of short sight amongst the elementary scholars.

Artificial light should, as far as possible, resemble daylight, not, of course, direct sunlight—that is, it should be an abundant and diffuse light. The incandescent electric light probably best fulfils these requirements, being almost free from heat, and giving rise to no noxious gases by combustion. It is preferable to have a number of smaller lights rather than one bright light of corresponding power, as by this arrangement the light is more diffused and the shadows are less dense. The minimum of artificial light for reading or writing by should be the amount of light yielded by ten ordinary paraffin candles at one yard distance (= 10 metre candles).

Bad print—the type being too small and too crowded—is another important factor in the production of short sight. It is a shame the miserably printed books that are still permitted or even recommended by some school managers!

The Causes of Myopia are, then, for the most part avoidable, and the school managers who wilfully or through culpable ignorance permit any of these causes of short sight to exist in their schools are guilty of a grave offence against the community as well as against the individual; for not only do they increase the risk of blindness to their individual scholars, and thus throw the burden of their support upon others, but they sow the seeds of blindness in the generations yet unborn, and thus rear up for themselves a monument of misery more lasting than brass, and earn a nation's blame.

Concerning Glasses.—There is a widespread and ignorant prejudice against the use of glasses, especially prevalent amongst the employers of labour. Now all the conditions of the eye with which I have been dealing, except progressive short sight, are comparatively harmless if corrected by suitable glasses, but are productive of infinite mischief, both temporary and permanent, if not so corrected. The undue strain and effort required causes many of the most serious and destructive affections to which the eye is subject, and glasses can alone relieve the eye from this strain. Yet what do we see—thousands of those who should wear glasses—young and old, male and female—endeavouring to read, write, sew, and work with aching eyes who might with glasses perform all duties without discomfort or injury.

It should never be forgotten that the difficulty in reading, writing, &c., which comes on so commonly about middle life, is in no sense a disease, or an evidence of decay, but is the effect of a purely natural change, which takes place in all healthy eyes.

It is due to a change in the consistency of the crystalline lens, which, becoming more solid, yields less to the influence of the accommodation muscle. It is folly, therefore, to fight against or lament over the inevit-

able; and when this condition, which is called "Presbyopia," manifests itself, it should at once be relieved by wearing suitable glasses.

When will employers learn these facts, and appreciate the commercial value of spectacles for their labourers?

It is a matter of daily experience—I see it every day at the hospitals I attend—strong, able-bodied men and women, and skilled artisans, able and willing to work, who are thrown out of employment, and consequently into pauperism, not for any fault of theirs, but because of the ignorant prejudice of their employers, who will not permit the use of spectacles; forgetting, or not knowing, that their difficulty in seeing is due not to disease but to the want of glasses. Often and often, when such cases are properly fitted with glasses, and the resulting benefit recognised by the patients, still they refuse to wear spectacles, saying—"I would not be allowed to wear glasses at work; I would be dismissed if the superintendent knew I required glasses; he'd say I was going blind." In reality the man does not want glasses because he is going blind, but he is going blind for want of the glasses.

Quite recently a highly respectable looking man, aged forty-nine, came to consult me at St. Mark's Ophthalmic Hospital. He complained of not being able to see his work. He was a fitter by trade, and was employed in one of the largest foundry works in Dublin. His sight I found to be perfectly normal for all distant objects, but he could not see small things near him with accuracy. Convex glasses enabled him to see the finest things, and I advised him to wear them at his work; but, as usual, his reply was—"The inspector wouldn't let me wear them, sir, He won't let any of the men working at the bench wear glasses." I asked if the inspector himself (who was about the same age as my patient) wore glasses. "Oh, indeed, he does, sir; for he can't examine the work without them," was the reply.

I appeal to you, in the name of justice and common sense, to do what you can to end this unjust and foolish tyranny!

A well-known preacher in America was so impressed with the moral influence of diseased teeth, that he urged each member of his congregation, as a first and essential duty, to consult a competent dentist, and have their teeth properly adjusted; he rightly judged that dyspepsia, neuralgia, &c., so frequently caused by diseased teeth, interfered materially with the development of the Christian virtues, and with the exercise of those social amenities on which rested the structure of civilised communities.

This preacher acted wisely and in accordance with the laws of physiology and of ethics—*Mens sana in corpore sano;* and if all who now are debarred from employment by want of suitable glasses, or other remediable conditions, could be properly tested and relieved, what a new view of life and its problems would many of them obtain, and how much poverty and misery would be obviated.

I have no doubt but that it would be a profitable investment for employers to have their hands each year examined by a competent oculist, and their sight tested, and free permission given to all to wear glasses if required.

The perfectly normal eye requires glasses, for seeing near objects, reading, &c., at about forty-five years of age—just when the workman's experience is of value—when he is in the prime of mental and physical activity, and when he is likely to have a wife and growing family dependent on him for support, and when he has become too specialised to turn to any other work. To debar such a man from the use of spectacles would be to force him out of the artisan into the lower labouring class, and from competence into poverty—an act of gratuitous cruelty as well as folly. For "now that the workman has become skilled, steadied with age and family ties, his vision will keep good till sixty-five or seventy years of age, or beyond, if he always has the proper helps to see. I ask, then, is there not money in retaining him, and should he not be kindly urged and advised to wear what his eyes require? I am too familiar with all these facts not to *know*, and hence here insist, that such foolish refusal to do what nature needs is one of the unnecessary causes of impaired vision."[a]

As I am on the subject of glasses, I am constrained to call attention to a matter which in America has attracted considerable attention. I allude to the unlicensed, unlimited, and ignorant sale of spectacles by itinerant hawkers, jewellers, and even some claiming the name of opticians.

The State, wisely considering that it is for the benefit of the community that potent drugs and medicines should not be sold except by those who possess certain knowledge of their properties, &c., issue, after due examination, a license to apothecaries. The public know then that they may safely get their prescriptions compounded by such apothecaries, and the more potent drugs are sold only on the written order of a duly qualified medical man.

Yet in the matter of the sale of spectacles, where infinite mischief may result from the use of unsuitable glasses, no restriction whatever exists upon their sale. Any one may call himself an optician and sell glasses to the public without let or hindrance. Surely these things ought not so to be. Moreover, many opticians, skilful in their business, take upon themselves, by reason of their optical knowledge, to prescribe special glasses for their customers; and grievous are the errors they at times commit. Knowing optics, they think they know all that is required, and they test the eye as they would test an optical instrument, ignorant or forgetful of the fact that it is also a living organ of the body, and cannot be treated from any other standpoint.

To prescribe suitable glasses for any individual case requires not only

[a] B. Joy Jeffries. Boston. 1883.

a knowledge of optics, but a thorough knowledge of physiology and general medical training. The eye is only a part of the complex mechanism of sight, and what the oculist has to do is to treat the individual, and not his eye only. It must never be forgotten that he is dealing with a vital, living, complex organism, not with an inanimate optical instrument. And just as the apothecary (*quâ* apothecary) is not a physician, so the optician is not an oculist, and should not pretend to do what his training does not enable him to do intelligently.

I am glad to learn that already in Dublin, London, Edinburgh, and Glasgow, the more respectable opticians refuse to supply spectacles to their customers without the order of an oculist.

The want of physiological knowledge amongst opticians leads them at times into strange errors. One of them (I heard) professed to give glasses with which, at any age, the wearer could see both near and far. This he accomplished by correcting one eye for distance and the other for near sight. They would be vigorous eyes that could stand that long!

I have seen persons wearing glasses suitable for short sight who should have been wearing glasses of quite another kind, as they were over-long-sighted, and the consequence was persistent spasm of the accommodation, pain in the head, fatigue of the eyes, and often giddiness. But I need not dilate further on this point. All who for a moment reflect must know that the obtaining of suitable glasses is in many instances, especially in cases of astigmatism, one of the most delicate and difficult problems in medicine, taxing all the acumen and knowledge of the oculist, aided as as he is by the results of modern science.

Before putting any boy or girl to any trade, profession, or occupation, it would be well to consider carefully the question of the eyes. So many of the employments of modern life call for long and accurate use of the eyes, and this not only in the professions, or as clerks, but many of the trades even to a greater extent. No writing clerk in an office has to tax his sight more than has a bootmaker in the exercise of his trade. Yet I have often seen individuals affected with high myopia bound to some such trade—individuals for whom alone a country life was suitable; and not till they had ruined their sight by the work had they applied for advice, which came too late to save the eyes from blindness—a blindness which might so easily have been averted had their guardians possessed a knowledge of the dangers to be avoided.

Concerning colour-blindness I have only a few words to say. Many individuals are unable to recognise any colour at all. To them all nature is painted in black and white, like an engraving. Many others are incapable of recognising some colours, whilst they see others with distinctness. The most usual colours to be lost are the complimentary colours, red and green. To such the red cherries and the green leaves of the tree seem the same colour, and both appear as dark gray.

Colour-blindness, which is usually a congenital and incurable condition, occurs more frequently in men than in women. Many accidents on railways and at sea are traceable to this defect existing in the railway-guards or sailors, causing them to mistake the signal-lights; for it is just those colours most used for signal-lights, red and green, the perception of which is most frequently lost in cases of colour-blindness.

It is hard for those who are in possession of good colour sense to appreciate the strange out-look obtained by those who are wholly colour-blind, and to whom all the various tints of sky and grass, and foliage and flowers, are but degrees of gray.

It is of the utmost importance to the public safety that all sailors, railway officials, and others who have to do with signalling, &c., should be tested for this defect, for many are themselves unaware of their infirmity, as they have never seen otherwise.

In most continental countries, and in America, this is done systematically. I regret to say that in these countries much laxity still exists in this matter, and much injury results. It would be a wise and simple expedient to have all children (especially boys) examined once by a competent person during their school-days for colour-blindness. As the affection is congenital and incurable, it is better to know of its existence before choosing a life occupation. In many occupations and professions colour-blindness is no injury; in others, as wood-carvers, steel-engravers, and etchers, colour-blindness is a positive advantage, as they are better able to observe the true value of light and shade, on which alone the success of their work depends. Moreover, it is cruel to allow a boy (or girl) to spend time and money in preparing for an occupation for which he is unfitted, and then, at the critical moment, discover his infirmity; or, worse still, allow him to accept an employment requiring correct colour-sight (as sailor, or railway-guard, or engine-driver, or signal-man), and, perhaps, bring upon himself disgrace and ruin, and on his fellow-beings death and calamity, by permitting a collision to take place which correct colour-vision on his part would have prevented.

I know in this brief survey of some of the points of my subject I have left unsaid many things that I ought to have said (I have wholly omitted the special risks to the eyes attending particular occupations); but in a lecture of this sort one can only touch the fringe of knowledge, without attempting to wrap oneself round with the mantle; still I hope I have said enough to show that there is much to be known, and that "Our Eyes and Our Industries" is a subject of personal importance to each one present.

> "Sterben ist nichts, doch
> Leben und nicht sehen, das
> Ist ein Unglück."—(Gœthe) *W. Tell.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, November 7, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.		Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.
Armagh -	18·9	18·9	25·2	12·6	Limerick -	16·8	18·2	14·0	11·2
Belfast -	24·3	23·8	23·4	25·5	Lisburn -	4·3	12·9	17·2	4·3
Cork -	23·8	21·0	23·8	22·4	Londonderry	27·2	16·0	19·2	25·6
Drogheda	—	17·6	13·2	17·6	Lurgan -	23·0	4·6	9·2	23·0
Dublin -	24·0	22·7	23·3	30·3	Newry -	15·6	19·5	7·8	19·5
Dundalk -	3·9	15·6	3·9	15·6	Sligo -	—	57·2	10·4	15·6
Galway -	19·0	45·6	3·8	0·0	Waterford -	28·8	16·8	9·6	9·6
Kilkenny	—	28·2	23·5	9·4	Wexford -	13·5	27·0	13·5	31·5

In the week ending Saturday, October 17, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 18·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·7 per 1,000. In Glasgow the rate was 19·4, and in Edinburgh t was 14·7.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 22·1 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in eleven of the districts to 7·2 in Waterford—the 12 deaths from all causes registered in that district comprising 3 from diarrhœa. Among

the 119 deaths from all causes registered in Belfast are 2 from scarlatina, 1 from whooping-cough, 3 from enteric fever, and 10 from diarrhœa.

In the Dublin Registration District the registered births amounted to 132—66 boys and 66 girls; and the registered deaths to 164—86 males and 78 females.

The deaths, which are 6 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·6 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 24·0 per 1,000. During the first forty-one weeks of the current year the death-rate averaged 24·9, and was 2·4 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 22, being 6 under the number for the preceding week and 3 below the average for the 41st week of the last ten years. They comprise 2 from whooping-cough, 9 from enteric fever, and 9 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 40, being 1 under the number for the preceding week. Thirteen enteric fever patients were discharged, 3 died, and 154 remained under treatment on Saturday, being 24 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 3 cases of measles, and 2 of typhus, but no case of scarlatina was received. Three cases of measles, 3 of scarlatina, and 6 of typhus remained under treatment in hospital on Saturday.

Twenty-seven deaths from diseases of the respiratory system were registered, being 13 over the low number for the preceding week and 1 over the average for the 41st week of the last ten years. They comprise 14 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 24, the mortality in twenty-eight large English towns, including London (in which the rate was 17·7), was equal to an average annual death-rate of 18·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 19·7, and in Edinburgh it was 17·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·5 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in Galway, Newry, Dundalk, Drogheda, Lurgan, and Armagh, to 14·1 in Kilkenny. The 6 deaths from all causes registered in the last-named district comprise 3 from diarrhœa. Among the 117 deaths from all causes registered in Belfast are 1 from scarlatina, 2 from enteric

fever, and 4 from diarrhœa. The 30 deaths in Cork comprise 1 from each of the following diseases—Scarlatina, whooping-cough, and diphtheria. The 11 deaths in Sligo comprise 1 from small-pox and 1 from diarrhœa. Referring to the death from small-pox, the Assistant Registrar of No. 1 District in which it occurred remarks :—" 5 months old, child of a tramp. I am not aware of any other case in town."

In the Dublin Registration District the registered births amounted to 179—89 boys and 90 girls; and the registered deaths to 153—82 males and 71 females.

The deaths, which are 8 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·0 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 22·7 per 1,000. During the first forty-two weeks of the current year the death-rate averaged 24·9, and was 2·3 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty-three deaths from zymotic diseases were registered, being equal to the average for the corresponding week of the last ten years, and 1 over the number for the week ended October 17. They comprise 4 from whooping-cough, 1 from diphtheria, 5 from enteric fever, 9 from diarrhœa. and 1 from dysentery.

Forty-two cases of enteric fever were admitted to hospital, being 2 over the number of admissions for the preceding week. Twenty-five enteric fever patients were discharged, 4 died, and 167 remained under treatment on Saturday, being 13 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include 3 cases of scarlatina, but no cases of either measles or typhus were received.

The number of deaths from diseases of the respiratory system registered is 22, being 6 under the average for the corresponding week of the last ten years, and 5 under the number for the week ended October 17. The 22 deaths comprise 13 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 31, the mortality in twenty-eight large English towns, including London (in which the rate was 16·7), was equal to an average annual death-rate of 18·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·5 per 1,000. In Glasgow the rate was 27·5, but in Edinburgh it was only 13·1.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 21·0 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·8 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·7 in Kilkenny—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 115 deaths from all causes registered in Belfast are 1 from scarlatina, 2 from whooping-cough, 3 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 137—72 boys and 65 girls; and the registered deaths to 161—82 males and 79 females.

The deaths, which are 4 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·2 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 23·3 per 1,000. During the first forty-three weeks of the current year the death-rate averaged 24·9, and was 2·2 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 19, being 5 below the average for the corresponding week of the last ten years, and 4 under the number for the week ended October 24. The 19 deaths comprise 3 from whooping-cough, 1 from diphtheria, 7 from enteric fever, and 6 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 36, being a decline of 6 as compared with the admissions for the preceding week. Twenty-seven enteric fever patients were discharged, 3 died, and 173 remained under treatment on Saturday, being 6 over the number in hospital on Saturday, October 24.

The hospital admissions for the week include, also, 1 case of each of the following diseases:—Measles, scarlatina, and typhus. One case of measles, 5 cases of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Thirty-two deaths from diseases of the respiratory system were registered, being 10 over the number for the preceding week, and 1 over the average for the 43rd week of the last ten years. They consist of 21 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 1 from laryngitis.

In the week ending Saturday, November 7, the mortality in twenty-eight large English towns, including London (in which the rate was 17·8), was equal to an average annual death-rate of 19·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·2 per 1,000. In Glasgow the rate was 27·8, and in Edinburgh it was 21·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·7 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in eight of the districts to 4·6 in Lurgan—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 125 deaths from all causes registered in Belfast are 1 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 163—83 boys and 80 girls; and the registered deaths to 209—100 males and 109 females.

The deaths, which are 33 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·4 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 30·3 per 1,000. During the first forty-four weeks of the current year the death-rate averaged 25·0, and was 2·1 under the mean rate in the corresponding period of the ten years 1881–1890.

Thirty-three deaths from zymotic diseases were registered, being 8 over the average for the corresponding week of the last ten years, and 14 over the number for the week ended October 31. They comprise 1 from measles, 2 from scarlatina, 1 from whooping-cough, 14 from enteric fever (being 9 over the average number of deaths from that disease in the corresponding week of the last ten years), 6 from diarrhœa, 3 from dysentery, and 1 from erysipelas.

Thirty-eight cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week, but 4 under the number for the week ended October 24. Twenty-one enteric fever patients were discharged, 2 died, and 191 remained under treatment on Saturday, being 15 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 2 cases of measles and 1 case of scarlatina, but no cases of typhus were received. Two cases of measles, 6 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Diseases of the respiratory system caused 35 deaths, being 2 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the week ended October 31. The 35 deaths comprise 25 from bronchitis and 7 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of October, 1891.

Mean Height of Barometer, - - -	29·626 inches
Maximal Height of Barometer (on 31st, at 9 a.m.),	30·647 „
Minimal Height of Barometer (on 13th, at 3 30 p.m.)	28·251 „
Mean Dry-bulb Temperature, - - -	48·2°.
Mean Wet-bulb Temperature, - - -	45·8°.
Mean Dew-point Temperature, - - -	43·1°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·280 inch.
Mean Humidity, - - - - -	83·3 per cent.
Highest Temperature in Shade (on 4th) - -	62·7°.
Lowest Temperature in Shade (on 25th), - -	33·0°.
Lowest Temperature on Grass (Radiation) (on 25th),	28·0°.
Mean Amount of Cloud, - - - -	41·6 per cent.
Rainfall (on 13 days), - - - -	3·590 inches.
Greatest Daily Rainfall (on 13th), - - -	1·176 inch.
General Directions of Wind, - - -	S., S.W., W.

Remarks.

October, 1891, may well be described as a month of contrasts. At the beginning some fine, warm autumnal days were experienced, interrupted indeed by a gale and heavy rain on the 5th. From the 8th to the 18th was a period of violent gales and heavy rains, with brief intervals of fine weather and very unsteady temperature. Then followed a week of low barometer, but fair weather and low temperature in Ireland, heavy rains and gales in England. The closing period, from the 25th to the 31st, was fine and quiet, with ground frosts and local fogs at night, bright and warm sunshine by day, with easterly winds.

In Dublin the arithmetical mean temperature (49·5°) was slightly below the average (49·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 48·2°. In the twenty-six years ending with 1890, October was coldest in 1880 (M. T. = 45·4°), and in 1885 (M. T. = 45·5°), and warmest in 1876 (M. T. = 53·1°). In 1886, the M. T. was as high as 52·0°; in the year 1879 (the "cold year"), it was 49·7°. In 1887, it was as low as 47·3°; in 1888, it was 49·1°; in 1889, it was only 48·1°; and in 1890, it was 51·7°.

The mean height of the barometer was 29·626 inches, or 0·214 inch below the corrected average value for October—namely, 29·840 inches. The mercury rose to 30·647 inches at 9 a.m. of the 31st, and fell to 28·251 inches at 3 30 p.m. of the 13th. This was the lowest reading recorded in Dublin since the memorable 8th of December, 1886, when the barometer sank to 27·758 inches at 2 30 p.m. The observed range

of atmospherical pressure was, therefore, not less than 2·396 inches—that is, a little less than two inches and four-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 48·2°, or 8·2° below the value for September, and 9·0° below that for August, 1891. The arithmetical mean of the maximal and minimal readings was 49·5°, compared with a twenty-five years' average of 49·7°. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × ·486), the value was 49·3°, or 0·2° below the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865–89, inclusive (49·5°). On the 4th, the thermometer in the screen rose to 62·7°—wind, S.S.W.; on the 25th the temperature fell to 33·0°—wind, W.N.W. The minimum on the grass was 28·0° also on the 25th; on six nights the thermometer sank to or below 32° on the grass.

The rainfall was as much as 3·590 inches, distributed over only 13 days—the rainfall was above, while the rainy days were largely below, the average. The average rainfall for October in the twenty-five years 1865–89, inclusive, was 3·106 inches, and the average number of rainy days was 17·6. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890 only ·639 inch fell on but 11 days, in 1884 only ·834 inch was measured on but 14 days, and in 1868 only ·856 inch on 15 days. In 1888, the rainfall was 1·227 inch on 16 days, and in 1889 no less than 4·853 inches fell on 22 days. From these figures it will be seen that October, 1890, proved the driest on record for more than a quarter of a century at least.

Solar halos were seen on the 2nd, 7th, and 22nd. High winds were noted on 12 days, and attained the force of a gale on as many as eight occasions—the 5th, 8th, 11th, 13th, 14th, 16th, 18th, and 27th. The atmosphere was more or less foggy in Dublin on the 15th, 22nd, 23rd, 29th, and 30th. Lightning was seen on the evenings of the 1st, 6th, and 20th. Hail fell on the 17th.

Favourable weather held in Dublin during the first three days.

Strong southerly and southwesterly winds, rising to the force of a gale in different parts of Western Europe at different times, and heavy rains, were the leading features of the weather of the week ended Saturday, the 10th. Dublin escaped the bad weather to a great and even a singular extent. Throughout the period, a large anticyclone was found over Central Russia, where the barometer stood persistently as high as 30·4 to 30·6 inches. At the same time a succession of large and deep depressions passed northwards or northeastwards along the Atlantic seaboard of Western Europe, causing the high winds and heavy rains already mentioned. From time to time the main system of low pressure threw off secondary depressions, which travelled across England and the North

Sea, so that broken weather spread to those districts also. In fact, the weather in England was much worse than that experienced in Dublin, where many fair intervals were enjoyed. On Tuesday evening lightning was seen, and thunder and lightning occurred in the S. and S.E. of England on Wednesday afternoon and night. In Dublin the mean barometrical pressure was only 29·493 inches. The barometer fell from 30·038 inches at 9 a.m. of Sunday (wind, S.S.W.), to 28·990 inches at 9 a.m. of Tuesday (wind, S.W.). The corrected mean temperature was 54·2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 53·2°. The screened thermometers rose to 62·7° on Sunday, the 4th. There were gales on Monday and Thursday. Lightning was seen on Tuesday evening. A solar halo appeared next morning. The rainfall was ·907 inch on four days, the maximal fall in 24 hours being ·659 inch on Monday. The prevailing winds were S. and S.W.

A most tempestuous, cold, and rainy period—such is the record of the week ended Saturday, the 17th. No less than three barometrical depressions of the first importance travelled across the Bristish Islands and the adjoining seas during the week, while numerous secondary depressions of less intensity were observed from time to time. The first of the prime disturbances lay to the N.W. of Ireland on Sunday morning, when the barometer was as low as 28·82 inches at Belmullet. Fresh gales from S. to S.W. and heavy rain accompanied this disturbance. Monday, the 12th, was fine but not settled, and in the evening heavy showers fell. On Tuesday the most intense of the three primary depressions mentioned above passed right over Ireland. The centre of the cyclone crossed the Co. Antrim in the evening, and the barometer fell to about 28 inches—at 6 p.m. the reading at Malin Head was 28·08 inches, and it was blowing a whole gale from E.N.E. At the same hour the barometer read 28·13 inches at Donaghadee, where there was a fresh gale from W.S.W. Thunder and lightning occurred in many places, and torrents of rain fell—particularly in Dublin (1·168 inches in 5 hours on Tuesday). The third great depression was found right over the North of Ireland at 8 a.m. of Friday, the 16th, the barometer being down to 28·87 inches near the centre. It caused sudden and violent gales with heavy falls of rain. On Saturday, the wind at last veered to N.W. and the weather moderated and brightened. In Dublin the mean height of the barometer was only 29·255 inches—pressure ranging between 28·251 inches at 3 30 p.m. of Tuesday (wind, S.W.) and 29·894 inches at 9 p.m. of Saturday (wind, W.N.W.). The corrected mean temperature was 48·6°, the mean dry bulb readings at 9 a.m. and 9 p.m. being still lower—viz., 47·2°. The thermometers in the screen rose to 57·9° on Tuesday, having fallen to 39·2° during the preceding night. Rain fell daily to the total amount of 2·437 inches. Of this quantity, 1·176 inches fell on Tuesday. Hail was noted on Saturday. The prevailing winds were S. and S.W.

As regards the week ended Saturday, the 24th, until Wednesday the weather remained in a very disturbed state in all parts of the United Kingdom. After that day, however, a marked improvement took place in Ireland and Scotland, while it remained wet and tempestuous in England until Friday. On Sunday an extensive depression passed over Ireland towards N.N.E., "surging" eastwards at the same time. A downpour of rain and violent southerly gales accompanied this disturbance, the high spring tides increasing the damage done by it along the coasts. This system had scarcely passed away when a new and still more serious depression arrived off the west coast of Ireland, where the barometer fell below 28·60 inches on Wednesday morning. And now a curious thing happened—the barometer began to rise over Ireland while it continued to fall over England. The result was that in the former country the wind moderated and the sky cleared, while strong gales and continuous rain were reported from England. The last four days were really beautifully fine on the east coast of Ireland. Winter set in with great severity in the North of Europe during this week—the 8 a.m. temperatures at Archangel were 19°, 15°, 6°, 8°, 14°, and 18°, up to Friday. In Dublin the mean height of the barometer was 29·356 inches—pressure ranging between 29·917 inches at 9 a.m. of Sunday (wind, S.S.W.) and 28·904 inches at 9 a.m. of Wednesday (wind, S.). The corrected mean temperature was 47·5°. The highest shade temperature was 56·6° on Tuesday; the lowest was 39·0° on Saturday. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·7°. Rain fell in measurable amount on two days, the total fall being ·244 inch, of which ·200 inch was referred to Sunday. The prevailing winds were—first, S., afterwards W. Lightning was seen on Tuesday evening.

A remarkable and most acceptable improvement in the weather was observed during the week ended Saturday, the 31st, more particularly in Ireland and Scotland. Already on Sunday an anticyclone, or area of high atmospherical pressure, was in course of formation over Scandinavia and the Norwegian Sea. This system moved gradually southwards and at the same time increased in intensity, until towards the close of the week it covered the British Islands and adjacent districts with central readings of the barometer as high as 30·74 inches. Exceptionally fine, quiet, bright weather held in Ireland after Tuesday. But up to and including that day strong easterly or northeasterly winds and much cloud prevailed, owing to the advance across the Peninsula and France of a succession of low pressure systems. These caused gloomy, wet, and stormy weather in the South of England, and heavy rainfalls in Spain and France. After Tuesday, conditions became tranquil and the sky cleared, so that sharp frosts and fogs occurred at night, while the days were sunny, dry, and bracing. At the end of the week depressions were again appearing over Northern Europe, where with a consequent shift of

wind to S.W. a sudden rise of temperature took place, amounting at Haparanda, on the Gulf of Bothnia, to 33°. At that station the thermometer read—1° F. at 8 a.m. of Thursday but + 32° F. at the same hour on Friday. In Dublin the mean height of the barometer was 30·296 inches, pressure steadily increasing from 29·905 inches at 9 a.m. of Sunday (wind, W.N.W.) to 30·647 inches at 9 a.m. of Saturday (wind, E.S.E.). The corrected mean temperature was 45·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·1°. The thermometers in the screen rose to 54·7° on Monday, having fallen to 33·0° on Sunday. Very light showers fell on Sunday and Tuesday, but yielded only ·002 inch of rain. There was an easterly gale on Tuesday afternoon. The prevalent winds during the week were N.E. and E.

The rainfall in Dublin during the ten months ending October 31st has amounted to 21·610 inches on 148 days, compared with 12·366 inches on 123 days during the same period in 1887, 19·219 inches on 147 days in 1888, 24·789 inches on 169 days in 1889, 21·494 inches on 162 days in 1890, and a 25 years' average of 22·840 inches on 160·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was as much as 5·122 inches on 14 days. Of this amount 1·180 inches fell on the 5th, ·750 inch on the 13th, ·720 inch on the 10th, and ·680 inch on the 18th. The rainfall in October, 1890, was only ·600 inch, distributed over 13 days. Of this quantity ·160 inch fell on the 6th, and ·120 inch on the 14th. The rainfall at Greystones in October, 1889, was no less than 6·935 inches on 22 days, or more than eleven times as great as the fall in October, 1890.

From January 1st, 1891, up to October 31st, rain fell at Knockdolian, Greystones, on 140 days, to the total amount of 24·744 inches.

HONOUR TO AN IRISH AUTHOR.

It will interest our readers to learn that Dr. Lindsay's "Climatic Treatment of Consumption" has been translated into French by Dr. F. Lalesque, Chef de Service au Sanatorium d'Arcachon. The publisher is M. Octave Doin, Place de l'Odéon, Paris. A translation of the same work into Polish is about to be undertaken by Dr. Neugebaur, of Warsaw. When reviewing Dr. Lindsay's book, in August, 1887, we expressed the opinion, without fear of contradiction, that it was an excellent book. Its subject-matter is well arranged and embodied in terse, clear language. It rivets the reader's attention, while it can scarcely fail to instruct even the most erudite student of medical climatology. We are glad to see that our encomiums are endorsed by our continental *confrères* in both France and Poland.

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NEW YORK POST-GRADUATE SCHOOL.

This School was founded in 1882, the first in America to offer organised instruction to medical men after graduation. Its usefulness is increasing and is yearly becoming more fully appreciated, the attendance during its last session having exceeded that of any previous year. It issues a periodical five times a year; and a supplementary number, containing details of classes, list of matriculates, and report of its dispensary and hospital, is now before us. In the past session 469 practitioners attended—from 41 States, from the Dominion, and from the West Indies. The hospital contains 114 beds—in male, female, and children's orthopædic wards, besides Babies' Wards in a separate building, as well as rooms for private patients. Undergraduates are not admitted to the School, which is open to any legally qualified practitioner. The fee for a twelve-weeks ordinary course is £30, in the autumn, winter, or spring sessions; £15 for the summer course; with extra fees for operative surgery, gynæcology, ophthalmology, and anatomy (on the dead body), and some other special subjects. The School is regularly chartered by the State.

THE WOOD ANEMONE.

M. Dupay (*Congrès des Sociétés Savantes*) reports that the active principle of the wood anemone, which occurs in well-defined needle-like crystals, is a very energetic medicinal agent. In toxic doses it produces hiccough, drowsiness, trembling of the limbs, bloody stools, followed by convulsions, and finally death occurs by paralysis. He believes it is valuable in chronic bronchitis, whooping-cough, and rheumatism.—*Les Nouveaux Remèdes*, No. 13, 1891.

THE KENTUCKY POISONINGS.

Medical jurists will read with interest a paper by Mr. Chenoweth (Asst. Prof. Surgery, University of Louisville, Ky.) in the *American Practitioner and News* of 15th Aug. It will be remembered that on the 15th May of this year there was a wedding at Snook-herr, near Louisville, at which about 80 people, including servants, were present. Within twenty-four hours of partaking of lunch seventy of the party were taken violently ill. Suspicions of malicious poisoning were excited, and some physicians went so far as publicly to attribute the symptoms to arsenic. "On the plate of each guest was placed a leaf of lettuce, a spoonful of chicken salad, a spoonful of mushrooms, olives, beaten biscuit, and a cracker; coffee, chocolate, ice-cream, and cake were served later. Water, 'from

a copious spring,' was drunk by nearly all." The author concludes, after an elaborate detailed investigation, that there was no mineral poison, that the mushrooms were not to blame, and that the mischief was due to the chicken of the salad. Of 81 persons 11 escaped illness, and these had eaten neither mushrooms nor salad, but had partaken of everything else. Many of the sick had eaten no mushrooms; 68 of the 70 had eaten salad or chicken, two only affirming that they had eaten none of it. No fowl-cholera was epidemic at the time, and the author concludes that a putrefactive alkaloid was generated in the chicken's flesh after cooking.

DEATHS FROM CHLOROFORM AND ETHER.

In the British Royal Infirmary, during the past 17 years, chloroform and chloroform and ether mixed, have been administered 5,902 times with 3 deaths, and ether 704 times with one death. Particulars of the four fatal cases are given by W. H. Harsant, F.R.C.S., in the *Bristol Medico-Chirurgical Journal* for September.

PEROXIDE OF HYDROGEN IN GONORRHŒA.

Dr. B. W. Richardson recommends (*Asclepiad*, XXXI.) an injection consisting of 10 vol. solution of the peroxide of hydrogen, one ounce; tannin, ten grains; distilled water, three ounces. Half-an-ounce to be injected twice daily. In a case he records the discharge had entirely ceased within a week, and ten weeks afterwards had not returned.

PEROXIDE OF HYDROGEN IN PLEURO-PNEUMONIA.

Dr. B. W. Richardson describes (*Asclepiad*, XXXI., page 215) a new apparatus by which ozonised oxygen can be administered by inhalation; 30 vol. peroxide of hydrogen, covered by a film of ether, has solution of permanganate of potassium added to it. The gas is pleasant to inhale, soothes cough, and in a recorded case seems to have had a beneficial effect.

VOLTAIC NARCOTISM.

Dr. B. W. Richardson describes (*Asclepiad*, XXXI.) some old experiments in which he caused local anæsthesia by applying the positive pole of an electric battery over some narcotic. In many cases complete local anæsthesia was obtained; whilst the check experiments of applying the solutions and the current separately were followed by no anæsthesia

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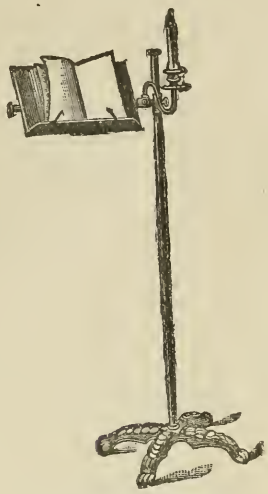

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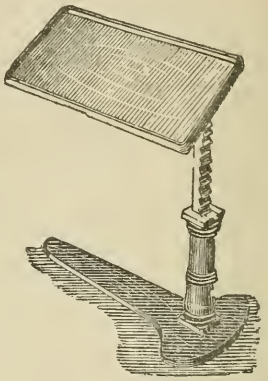

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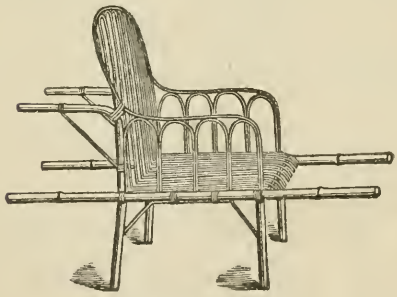

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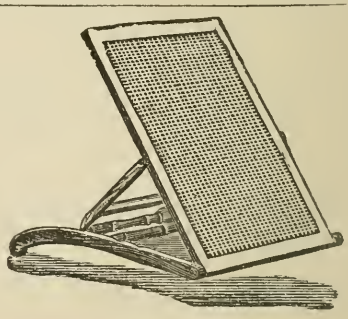

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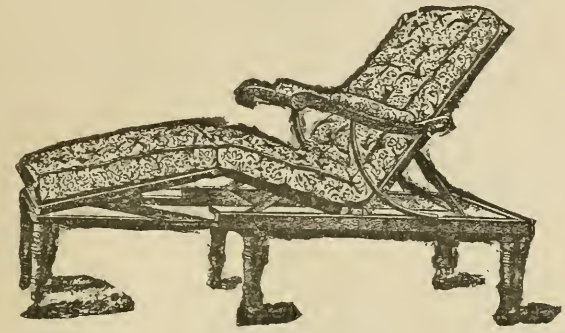

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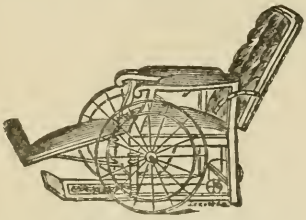

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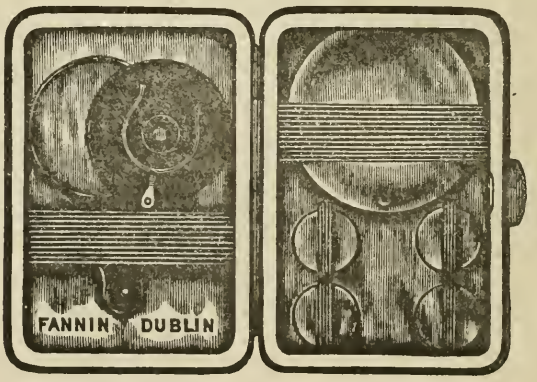

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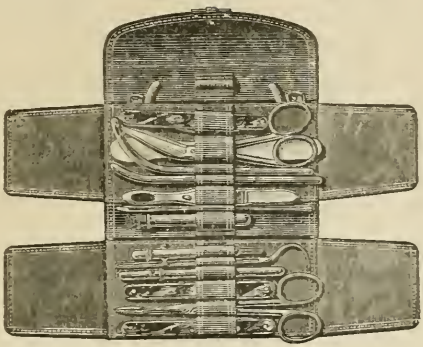

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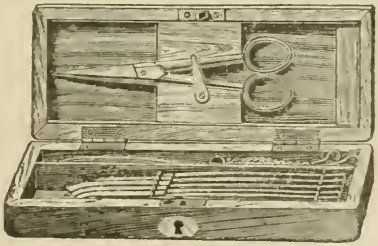

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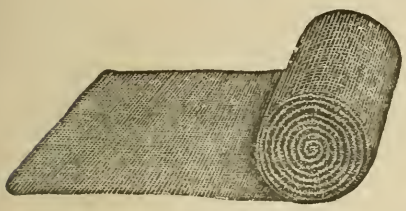

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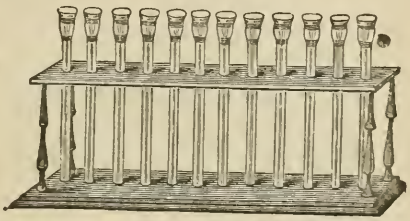

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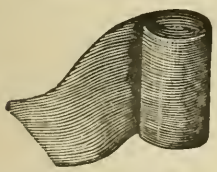

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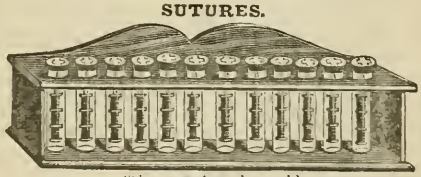

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LIEBIG'S EXTRACT OF MEAT AND MALT WINE.

WINCARNIS *Is a New Name Registered to prevent fraudulent Imitations.*

Extract from Important Unsolicited Testimonial from G. **HOTHER, Esq., M.R.C.S., L.S.A L.**

OVER TWO THOUSAND have been received from Medical Men.

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Are used in the treatment of all cases in which the cure is recommended—viz., in *Chronic Gastric Catarrh, Hypercæmia of the Liver, Gall Stones, Chronic Constipation, Diabetes, Renal Calculi, Gout,* and diseases of the Spleen arising from residence in the tropics or malarious districts.

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contains all the essential ingredients of the CARLSBAD "SPRUDEL" MINERAL WATER. It is alkaline, and readily soluble in water. In small and frequent doses it is an efficient *diuretic*, but as an *aperient* it should be taken *before Breakfast* in doses of from 1 to 2 teaspoonfuls, dissolved in water, preferably warm.

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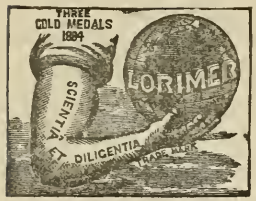

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NEUTRAL, DEFINITE, AND STATED FORMULA.
PERMANENT. PRICE MODERATE.

EXTRACT OF MALT.

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Reprint from the *Lancet*, October 3rd, 1891.—This very interesting product differs from the ordinary eucalyptus oil, in that it is characterised by an exceptionally fragrant, penetrating and pleasing odour, resembling very closely the scented geranium. It is distilled from the young leaves of the eucalyptus maculata (var. citriodora), which grows in the Port Curtis district of Queensland. Very satisfactory results were yielded on examination, and the following factors which we obtained, demonstrate the eminent purity of this remarkable product: Specific gravity at 15° C., 0·872; boiling point, 190° to 195° C. This oil seems not only admirably fitted for all ordinary antiseptic and deodorising purposes, but it is also of probable value in the form of inhalation in pulmonary affections, and in the treatment of certain internal disorders.

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Each Wineglassful contains the Extractive Properties of One Drachm of
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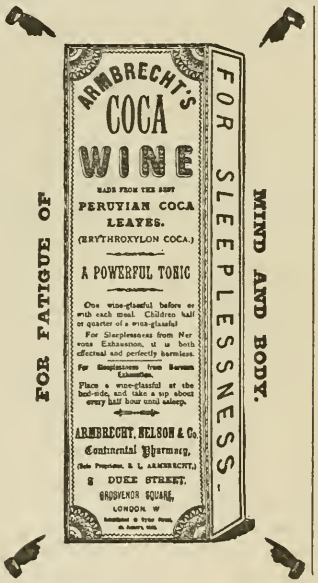

P.S.—This is the only Wine which contains the Extractive Properties of the GREEN and FRESH LEAVES, and is therefore much more efficacious than those wines made from the dry imported leaves.

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A Sample Bottle free to Medical Men and Clergymen on receipt of professional card.
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This delicious and highly nutritive Food was awarded the GOLD MEDAL at the International Health Exhibition, London, and has since received a High Award at every Exhibition at which it has been shown.

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From an Eminent Surgeon.

"After a lengthened experience of Foods, both at home and in India, I consider 'Benger's Food' incomparably superior to any I have ever prescribed."

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"This particular food is the only one I have been able to take constantly and with advantage. I have prescribed it for others with the best results."

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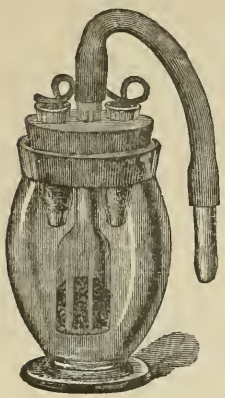

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AFFECTIONS,
HAY ASTHMA.

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PULVERMACHER'S WORLD-FAMED GALVANIC BELTS, for the cure of NERVOUS Diseases, have received Testimonials from Three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London.

The distressing symptoms of NERVOUS EXHAUSTION, loss of MUSCULAR POWER, RHEUMATISM, SCIATICA, PARALYSIS, EPILEPSY, &c., are speedily removed by means of PULVERMACHER'S WORLD-FAMED GALVANIC BELTS, which convey the electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of premature waste and decay.

Dr. VINES, Fellow of the Royal College of Physicians, writes, 19th September, 1885:—"Having used Mr. PULVERMACHER'S BELTS for many years, in the course of medical practice, I am in a position to speak of their great value as a curative agent in cases of nervous disease or functional malady where Electricity is likely to be serviceable. I am entirely convinced of their efficacy."

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ESTABLISHED OVER FORTY YEARS

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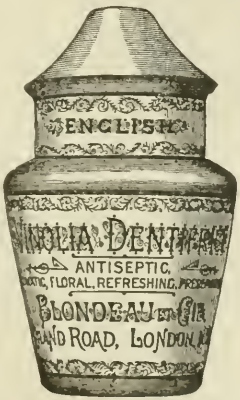
41 GRAFTON-STREET, DUBLIN.

Errors in Teeth Brushing.

IT is safe to affirm that a large majority of persons err in the selection of a tooth brush. Most brushes are far too stiff, and their habitual use is attended with ill results. Many sets of teeth have been ruined by too much or injudicious brushing. Skill and not force, faithfulness and not muscle, are required to produce the best results.

Most persons scrub the outer surfaces of the teeth as if to clean by scouring or friction were the object in using a brush. A very moderate application of a proper brush with a gentle frictional powder is sufficient for the external surfaces of the teeth, and is desirable in order to prevent the tendency to unsightly discolourations, but as a prevention of decay is the least useful mode of brushing. Indeed, if the cleansing process is carried no farther, this style of brushing does perhaps more harm than good, as it rubs particles of food and stringy mucus in between the teeth, and allows them to remain just where they are capable of producing the greatest mischief.



The tooth brush should be moderately soft, the bristles long and elastic, and of uneven lengths, so as to facilitate their introduction between the teeth. The upper teeth should be brushed downward and the lower teeth upward, thus avoiding crowding the gums from off the necks of the teeth, while tending to the dislodgment of any deposits between them. The articulating faces of the teeth should be brushed with the same care as the other surfaces—backwards and forwards and from side to side over the grinding surfaces of the molars so as to cleanse all the depressions. Once daily is quite enough to use a powder

[As "Vinolia" Dentifrice is not a scouring tooth powder containing acicular particles, it may be used as often as one wishes. Leading dentists say it is wise to clean the teeth, at least, immediately after rising in the morning and just before going to bed at night.—B. & Cie.]

The use of a quill toothpick after meals to dislodge particles of food from between the teeth is advisable, as is also the use of a strand of wax floss silk passed between them at least once daily.

Such is the care suggested by the inestimable value of the teeth and by their tendency to decay. "But such care," remarks an American dentist, "can hardly be hoped for until the public realise that to lose a tooth is a real misfortune, to extract one unnecessarily a crime."

The loss of a tooth, except in the front of the mouth, is unfortunately not considered a serious matter by most persons, and the extent of the disaster is not appreciated, perhaps, for years afterwards. Were it otherwise, the small amount of attention required by the teeth would be cheerfully bestowed.—(From "Cassell's Almanac," 1891.)

"VINOLIA" DENTIFRICE,

English, 2s. 6d.; *American*, 1s. 6d.

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VINOLIA SHAVING SOAP,

In Silver metal Cases, 1s., 1s. 6d., & 2s. 6d. a Stick.

Flat Cakes Toilet, 2s., Vestal, 2s. 6d.

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"The Water is cheap as well as good."

"Invalids are recommended to drink it."

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